Chapter 1
ADMINISTRATION

101.1 Title. These regulations shall be known as the *City of Houston Fire Code* ~~of [NAME OF JURISDICTION]~~, hereinafter referred to as "this code."

101.2.1 Appendices. Provisions in the appendices shall not apply unless specifically adopted. Appendices A, B, C, D, E, F, G and H are hereby adopted and made part of this code.

101.3 Intent. The purpose of this code is to establish the minimum requirements consistent with nationally recognized good practice for providing a reasonable level of life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises. The provisions of this code shall not apply to any activity for which local regulation is preempted by federal or state law.

101.3.1 Landlord/tenant. The terms of this code shall not be construed to alter the terms of any lease or other agreement between landlord and tenant or others relating to property that is the subject of this code; provided that no provision of any lease or other agreement shall be construed to excuse compliance with this code by any person, including the construction, maintenance, occupancy, or use of any property in violation of this code. It is the intent of this code to identify the parties this jurisdiction will hold responsible for compliance with and violations of this code, rather than to determine the rights and liabilities of persons under agreements to which this jurisdiction is not a party.

101.6 Code references. Wherever in this code a reference is made to the *International Building Code*, *International Plumbing Code*, or *International Mechanical Code*, the references shall be construed to mean the current *Building*, *Plumbing*, or *Mechanical Code* of the jurisdiction, which may or may not in fact be based upon the International Series of Codes.

101.7 Standards. Copies of the Houston Fire Department Standards that are referred to in this code have been placed on file in the City Secretary's Office in connection with the code's adoption and shall constitute a part of this code. The standards may be inspected in the City Secretary's Office or the Office of the Fire Prevention Bureau and copies may be purchased at the fees prescribed by law.

Houston Amendments

102.2 Administrative, operational and maintenance provisions. The administrative, operational and maintenance provisions of this code shall apply to:

1. Conditions and operations arising after the adoption of this code.
2. Existing conditions and operations: not legally in existence at the time of adoption of this code.
3. Conditions that, in the opinion of the code official, constitute a distinct hazard to life or property.

This section shall be construed in a manner that is consistent with Chapter 34 of the *Building Code*, Appendix "L" of the *Building Code* (Life Safety Requirements for Existing Buildings), Sections 102 and 110 of this code and City of Houston Ordinance No. 78-2672.

102.2.1 Existing buildings. Buildings or structures in existence at the time of the passage of this code may have their existing use or occupancy continued if the buildings or structures comply with the standards established in Article IX of Chapter 10 of the *City Code*, Section 102.6 and Chapter 34 of the *Building Code* and Appendix "L" of the *Building Code* (Life Safety Requirements for Existing Buildings). Determination of compliance shall be under the primary jurisdiction of the building official. Whenever the code official determine, pursuant to inspection of such a building or structure, that there exists therein a fire hazard that causes the building or structure to be dangerous to life, the code official shall initiate proceedings under Article VIII of Chapter 10 of the *City Code*, including the placarding of buildings as authorized therein. The code official shall notify the building official, and if the building official determines that the building or structure constitutes a dangerous building as defined in Article IX of Chapter 10 of the *City Code*, then the building official shall initiate dangerous building abatement proceedings before the hearing official or the Building and Standards Commission under the applicable provisions of Chapter 10 of the *City Code*.

102.9 Conflicting provisions. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall be applicable. Where in any specific instance, the applicable provisions of the *Construction Code* specify different materials, methods of construction or other requirements than the this code and the building official and the code official are unable to mutually reconcile the requirements by issuing a written interpretation, then either of them may refer the matter to the General Appeals Board created under the *Building Code*. The General Appeals Board shall conduct a review of the matter and issue a written code interpretation based upon the apparent intent of the codes involved. Notwithstanding any other provision, interpretations that are issued by the General Appeals Board shall not be subject to any further appeal.

SECTION 103
~~DEPARTMENT OF~~ LIFE SAFETY AND FIRE PREVENTION BUREAU

103.1 General. The ~~department of~~ Life Safety and Fire Prevention Bureau of the Houston Fire Department is established within the jurisdiction under the direction of the code official. The function of ~~the department~~ this bureau shall be the implementation, administration and enforcement of the provisions of this code.

103.2 ~~Appointment.~~ ~~The code official shall be appointed by the chief appointing authority of the jurisdiction; and the code official shall not be removed from office except for cause and after full opportunity to be heard on specific and relevant charges by and before the appointing authority.~~

~~103.3 Deputies.~~ ~~In accordance with the prescribed procedures of this jurisdiction and with the concurrence of the appointing authority, the code official shall have the authority to appoint a deputy code official, other related technical officers, inspectors and other employees.~~

~~103.4 Liability.~~ ~~The code official, officer or employee charged with the enforcement of this code, while acting for the jurisdiction, shall not thereby be rendered liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of an act required or permitted in the discharge of official duties.~~

- **~~103.4.1 Legal defense.~~** ~~Any suit instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in an action, suit or proceeding that is instituted in pursuance of the provisions of this code; and any officer of the department of fire prevention, acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith.~~

Liability. Except as otherwise provided by law, the code official shall not be personally liable in damages for any act or omission arising out of any official action taken to implement and enforce the provisions of this code. Additionally, except as otherwise provided by law, the code official shall not be personally liable in damages for any action or omission taken in the course and scope of his employment. Where and to the extent consistent with the provisions of Article X of Chapter 2 of the *City Code*, the jurisdiction shall provide legal representation and indemnification for any suit brought against the code official because of acts or omissions performed in the enforcement of this code. This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating or controlling any building or structure for any damages to persons or property caused by defects, nor shall this jurisdiction be held as assuming any liability by reason of the inspections authorized by this code or any permits or certificates issued under this code. See also Section 105.3.

Houston Amendments

104.1 General. Consistent with the provisions of this code, the code official is hereby authorized to enforce the provisions of this code and shall have the authority to render interpretations of this code, and to adopt policies, procedures, rules and ~~regulations~~ standards in order to clarify the application of its provisions. Such interpretations, policies, procedures, rules and ~~regulations~~ standards shall be in compliance with the intent and purpose of this code and shall not have the effect of waiving requirements specifically provided for in this code. A certified copy of the standards shall be filed with the City Secretary and additional copies shall be kept in the office of the Fire Prevention Bureau for inspection by the public. Copies shall be furnished at the fees provided by law.

The code official is authorized to enforce all ordinances of the jurisdiction and laws of the state pertaining to:

1. The prevention of fires,
2. The suppression or extinguishing of dangerous or hazardous fires,
3. The storage, use and handling of hazardous materials,
4. The installation and maintenance of automatic, manual and other private fire alarm systems and fire extinguishing equipment,
5. The maintenance and regulation of fire escapes,
6. The maintenance of fire protection and the elimination of fire hazards on land and in buildings, structures and other property including those under construction,
7. The means, adequacy and maintenance of egress,
8. The investigation of the cause, origin and circumstances of fire and unauthorized releases of hazardous materials,
9. The posting of certificates of occupancy and life safety certificates where required by the *Building Code*, and
10. The conducting of fire safety campaigns.

104.1.1 Standards. Throughout this code, the code official is authorized to grant approvals or permissions, promulgate standards, impose requirements, or exercise similar discretionary authorization over materials, personnel, activities or procedures; however, no specific standards or decision making criteria are stated. It is intended that discretionary authorization be administered in a uniform manner, that authorizations not be unreasonably withheld, and that rules and standards be based upon the preservation of the public health, safety and welfare. The code official shall be guided by accepted principles of fire safety and shall look to this code and any standards that are adopted herein by reference for guidance. If an individual authorization is denied, the person requesting the authorization shall be advised of the reasons in writing and shall be entitled to a review of the decision by appeal to the Board of Appeals.

Houston Amendments

104.3 Right of entry. Whenever it is necessary to make an inspection to enforce the provisions of this code, or whenever the code official has reasonable cause to believe that there exists in a building or upon any premises any conditions or violations of this code which make the building or premises unsafe, dangerous or hazardous, the code official shall have the authority to enter the building or premises at all reasonable times to inspect or to perform the duties imposed upon the code official by this code. If such building or premises is occupied, the code official shall present proper credentials to the occupant and request entry. If such building or premises is unoccupied, the code official shall first make a reasonable effort to locate the owner or other person having charge or control of the building or premises and request entry. If entry is refused, the code official has recourse to every remedy provided by law to secure entry.

104.3.1 Emergency entry and warrant. When due to an emergency, or when immediate entry is necessary to protect life or property, or when the code official has first obtained a proper inspection warrant or other remedy provided by law to secure entry, an owner or occupant or person having charge, care or control of the building or premises shall not fail or neglect, after proper request is made as herein provided, to permit entry therein by the code official for the purpose of inspection and examination pursuant to this code.

104.10.1 Assistance from other agencies. When requested to do so by the code official, the police and other enforcement agencies shall have authority to render necessary assistance to the fire department in enforcing the provisions of this code. ~~in the investigation of fires when requested to do so.~~

105.1.1 Permits required. Permits required by this code shall be obtained from the Houston Fire Department Permit Office. ~~code official.~~ A permit shall be obtained prior to engaging in any activities, operations, practices, or functions regulated by this code and requiring a permit as listed in Section 105.6. Permit fees, ~~if any~~ as required, shall be paid prior to issuance of the permit. Issued permits shall be kept on the premises designated therein at all times and shall be readily available for inspection by the code official. It shall be unlawful for any reason for any person to engage in any activities, operations, practices or functions as listed in Section 105.6, without holding a current and valid permit for the activity, operation, practice or function as issued by the fire department permit office.

105.1.2 Types of permits. There shall be two types of permits as follows:

1. Operational permit, issued by the Fire Department. An operational permit allows the applicant to conduct an operation or a business for which a permit is required by Section 105.6 for either:

    1.1. A prescribed period.

    1.2. Until renewed or revoked.

2. Construction permit, issued by the building official in accordance with the *Building Code*. A construction permit allows the applicant to install or modify systems and equipment for which a permit is required by and in accordance with the *Building Code* and Section 105.6.

105.1.3 Permits for the same location. When more than one operational permit is required for the same location, the code official is authorized to consolidate such operational permits into a single permit provided that each provision is listed in the permit.

105.2 Application. Application for an operational permit required by this code shall be made to the code official in such form and detail as prescribed by the code official. Applications for permits shall be accompanied by such plans as prescribed by the code official. Application forms may be obtained during regular business hours at the Houston Fire Department Permit Office.

105.2.2 Inspection authorized. Before a new operational permit is approved, the code official is authorized, but not required, to inspect the receptacles, vehicles, buildings, devices, premises, storage spaces or areas to be used to determine compliance with this code or any operational constraints required. In instances where laws or regulations are enforceable by departments of the jurisdiction other than the fire department, joint approval shall be obtained from all departments concerned.

105.3.1 Expiration. An operational permit shall remain in effect until reissued, renewed, or revoked or for such a period of time as specified in the permit. ~~Construction permits shall automatically become invalid unless the work authorized by such permit is commenced within 180 days after its issuance, or if the work authorized by such permit is suspended or abandoned for a period of 180 days after the time the work is commenced. Before such work recommences, a new permit shall be first obtained and the fee, if any, shall be one-half the amount required for a new permit for such work, provided no changes have been made or will be made in the original construction documents for such work, and provided further that such suspension or abandonment has not exceeded one year.~~ Permits are not transferable and any change in occupancy, operation, tenancy or ownership shall require that a new permit be issued.

105.3.3 Occupancy prohibited before approval. ~~The~~ No portion of a building or structure shall ~~not~~ be occupied ~~prior to the code official issuing a permit that indicates that applicable provisions of this code have been met.~~ until the required fire detection, alarm and suppressions systems have been tested and approved.

Exceptions:

1. The building official is authorized to issue a temporary certificate of occupancy in accordance with the *Building Code*.

2. The code official with the joint approval of the building official, is authorized to permit the temporary occupancy of a building, or portion thereof, when standby personnel are provided in accordance with Section 112.

105.3.4 Reserved. ~~Conditional permits.~~ ~~Where permits are required and upon the request of a permit applicant, the code official is authorized to issue a conditional permit to occupy the premises or portion thereof before the entire work or operations on the premises is completed, provided that such portion or portions will be occupied safely prior to full completion or installation of equipment and operations without endangering life or public welfare. The code official shall notify the permit applicant in writing of any limitations or restrictions necessary to keep the permit area safe. The holder of a conditional permit shall proceed only to the point for which approval has been given, at the permit holder's own risk and without assurance that approval for the occupancy or the utilization of the entire premises, equipment or operations will be granted.~~

105.6.2 ~~Amusement buildings.~~ ~~An operational permit is required to operate a special amusement building.~~ **Apparatus access, road access-control gates.** An operational permit is required to install or maintain an access-control gate on a fire apparatus access road.

105.6.4 Carnivals, festivals, trade show exhibitions and fairs. An operational permit is required to conduct a carnival, festival, trade show exhibition or fair. A site or floor plan showing the dimensions and locations of the aisles, cooking booths, LP-gas storage, etc. shall be submitted with the permit application.

105.6.2 Reserved. ~~Cutting and welding.~~ ~~An operational permit is required to conduct cutting or welding operations within the jurisdiction.~~

105.6.12 Reserved. ~~Cutting and welding.~~ ~~An operational permit is required to conduct cutting or welding operations within the jurisdiction.~~

105.6.14. Reserved. ~~Exhibits and trade shows.~~ ~~An operational permit is required to operate exhibits and trade shows.~~

105.6.15 Explosives, fireworks, and pyrotechnics. An operational permit is required for the manufacture, storage, handling, sale or use of any quantity of explosive, explosive material, fireworks, or pyrotechnic special effects within the scope of Chapter 33.

~~**105.6.16 Fire hydrants and valves.** An operational permit is required to use or operate fire hydrants or valves intended for fire suppression purposes which are installed on water systems and accessible to a fire apparatus access road that is open to or generally used by the public.~~

~~**Exception:** A permit is not required for authorized employees of the water company that supplies the system or the fire department to use or operate fire hydrants or valves.~~

Fire depository, key boxes. An operational permit is required to install a key box or fire depository box, or both, to facilitate fire department access to or within a structure or area, in accordance with Houston Fire Department LSB Standard No. 06, "Fire Depository Boxes."

105.6.17 Flammable and combustible liquids. An operational permit is required:

1. To use or operate a pipeline for the transportation within facilities of flammable or combustible liquids. This requirement shall not apply to the off-site transportation in pipelines regulated by the Department of Transportation (DOTn) (see Section 3501.1.2) nor does it apply to piping systems (see Section 3503.6).
2. To store, handle or use Class I liquids in excess of 5 gallons (19 L) in a building or in excess of 10 gallons (37.9 L) outside of a building, except that a permit is not required for the following:
   2.1. The storage or use of Class I liquids in the fuel tank of a motor vehicle, aircraft, motorboat, mobile power plant or mobile heating plant, unless such storage, in the opinion of the code official, would cause an unsafe condition.
   2.2. The storage or use of paints, oils, varnishes or similar flammable mixtures when such liquids are stored for maintenance, painting or similar purposes for a period of not more than 30 days.
3. To store, handle or use Class II or Class IIIA liquids in excess of 25 gallons (95 L) in a building or in excess of 60 gallons (227 L) outside a building, except for fuel oil used in connection with oil-burning equipment.
4. To remove Class I or Class II liquids from an underground storage tank used for fueling motor vehicles by any means other than the approved, stationary on-site pumps normally used for dispensing purposes.
5. To operate tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.
6. To install, alter, remove, abandon, place temporarily out of service (for more than 90 days) or otherwise dispose of an underground, protected above-ground or above-ground flammable or combustible liquid tank.

7. To change the type of contents stored in a flammable or combustible liquid tank to a material which poses a greater hazard than that for which the tank was designed and constructed.

8. To manufacture, process, blend or refine flammable or combustible liquids.

Exception: A permit is not required for any activity where the requirement of local permits is preempted by federal or state law.

105.6.21 Hazardous materials. An operational permit is required to store, transport on site, dispense, use or handle hazardous materials in excess of the amounts listed in Table 105.6.21.

Exception: A permit is not required for any activity where the requirement of local permits is preempted by federal or state law.

105.6.22 Reserved. ~~HPM facilities.~~ ~~An operational permit is required to store, handle or use hazardous production materials.~~

105.6.23 High-piled storage. An operational permit is required to use a building or portion thereof as a high-piled storage area (as defined in Chapter 23) exceeding ~~500~~ 2500 square feet (~~46~~ 232 m^2). A floor plan showing the dimensions and location of the stock piles and aisles shall be submitted with the permit application in accordance with Chapter 23.

105.6.24 Hot work operations. An operational permit is required for hot work including, but not limited to:

1. Public exhibitions and demonstrations where hot work is conducted.

2. Use of portable hot work equipment inside, or for cutting or welding in or on a building or a structure.

   Exception: Work that is conducted under a construction permit.

3. Fixed-site hot work equipment such as welding booths.

4. Hot work conducted within a hazardous fire area.

5. Application of roof coverings with the use of an open flame device.

6. ~~When approved, the code official shall issue a permit to carry out a Hot Work Program. This program allows approved personnel to regulate their facility's hot work operations. The approved personnel shall be trained in the fire safety aspects denoted in this chapter and shall be responsible for issuing permits requiring compliance with the requirements found in this chapter. These permits shall be issued only to their employees or hot work operations under their supervision.~~

105.6.28 LP-gas. An operational permit is required ~~for:~~

1. ~~Storage and use of LP-gas.~~ to install or maintain any LP-gas container or operate any tank vehicle that is used for the transportation of LP-gas. For a single container with a capacity of 500-gallon (1893 L) water capacity or for one or more containers with an aggregate capacity of 2,000 gallons (7572 L) water capacity or more, the installer shall submit plans for the permit.

Exception~~s~~: ~~A permit is not required for individual containers with a 500-gallon (1893 L) water capacity or less serving occupancies in Group R-3.~~

1. Portable containers or less than 125 gallons (473 L) aggregate water capacity.
2. To use LP-gas for demonstrations and public exhibitions.
3. To use LP-gas for temporary commercial cooking or on mobile food carts.

2. ~~Operation of cargo tankers that transport LP-gas.~~

105.6.30 Miscellaneous combustible storage. ~~An operational permit is required to store in any building or upon any premises in excess of 2,500 cubic feet (71 m³) gross volume of combustible empty packing cases, boxes, barrels or similar containers, rubber tires, rubber, cork or similar combustible material.~~ An operational permit is required to store more than 50 cubic feet (1.4 m³) of uncompacted rubbish or combustible waste.

105.6.31 Open burning. An operational permit is required for the kindling or maintaining of an open fire or a fire on any public street, alley, road, or other public or private ground. See Section 307. ~~Instructions and stipulations of the permit shall be adhered to.~~

~~Exception:~~ ~~Recreational fires.~~

105.6.35 Reserved. ~~Private fire hydrants.~~ ~~An operational permit is required for the removal from service, use or operation of private fire hydrants.~~

~~Exception:~~ ~~A permit is not required for private industry with trained maintenance personnel, private fire brigade or fire departments to maintain, test and use private hydrants.~~

105.6.36 Reserved. ~~Pyrotechnic special effects material.~~ ~~An operational permit is required for use and handling of pyrotechnic special effects material.~~

105.6.38 Reserved. ~~Refrigeration equipment.~~ ~~An operational permit is required to operate a mechanical refrigeration unit or system regulated by Chapter 6.~~

105.6.39 ~~Repair garages and service~~ Motor vehicle fuel-dispensing stations. An operational permit is required to dispense flammable or combustible liquids, liquefied petroleum gas,

liquefied natural gas or compressed natural gas, in accordance with Chapter 22. ~~for operation of repair garages and automotive, marine and fleet service stations~~.

105.6.43 Temporary membrane structures, tents and canopies. An operational permit is required to operate an air-supported temporary membrane structure or a tent having an area in excess of 1200 square feet (~~19~~ 112 m²), or a canopy in excess of ~~400~~ 1200 square feet (~~37~~ 112 m²).

Exceptions:

1. Tents used exclusively for recreational camping purposes.
2. Fabric canopies and awnings open on all sides which comply with all of the following:
   2.1. Individual canopies shall have a maximum size of 700 square feet (65 m²).
   2.2. The aggregate area of multiple canopies placed side by side without a fire break clearance of 12 feet (3658 mm) shall not exceed 700 square feet (65 m²) total.
   2.3. A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be provided.

105.6.47 Asphalt kettles and roof torching operations. A permit is required in accordance with Sections 303 and Chapters 14 and 26.

105.7 Reserved. ~~**Required construction permits.** The code official is authorized to issue construction permits for work as set forth in Sections 105.7.1 through 105.7.12.~~

~~**105.7.1 Automatic fire-extinguishing systems.** A construction permit is required for installation of or modification to an automatic fire-extinguishing system. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.~~

~~**105.7.2 Compressed gases.** When the compressed gases in use or storage exceed the amounts listed in Table 105.6.9, a construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a compressed gas system.~~

~~**Exceptions:**~~

~~1. Routine maintenance.~~
~~2. For emergency repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.~~

The permit applicant shall apply for approval to close storage, use or handling facilities at least 30 days prior to the termination of the storage, use or handling of compressed or liquefied gases. Such application shall include any change or alteration of the facility closure plan filed pursuant to Section 2701.5.3. The 30-day period is not applicable when approved based on special circumstances requiring such waiver.

105.7.3 Fire alarm and detection systems and related equipment. A construction permit is required for installation of or modification to fire alarm and detection systems and related equipment. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

105.7.4 Fire pumps and related equipment. A construction permit is required for installation of or modification to fire pumps and related fuel tanks, jockey pumps, controllers, and generators. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.

105.7.5 Flammable and combustible liquids. A construction permit is required:

1. To repair or modify a pipeline for the transportation of flammable or combustible liquids.
2. To install, construct or alter tank vehicles, equipment, tanks, plants, terminals, wells, fuel-dispensing stations, refineries, distilleries and similar facilities where flammable and combustible liquids are produced, processed, transported, stored, dispensed or used.
3. To install, alter, remove, abandon, place temporarily out of service or otherwise dispose of a flammable or combustible liquid tank.

105.7.6 Hazardous materials. A construction permit is required to install, repair damage to, abandon, remove, place temporarily out of service, or close or substantially modify a storage facility or other area regulated by Chapter 27 when the hazardous materials in use or storage exceed the amounts listed in Table 105.6.21.

Exceptions:

1. Routine maintenance.
2. For emergency repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.

105.7.7 Industrial ovens. A construction permit is required for installation of industrial ovens covered by Chapter 21.

Exceptions:

1. Routine maintenance.
2. For repair work performed on an emergency basis, application for permit shall be made within two working days of commencement of work.

~~**105.7.8 LP-gas.** A construction permit is required for installation of or modification to an LP-gas system.~~

~~**105.7.9 Private fire hydrants.** A construction permit is required for the installation or modification of private fire hydrants.~~

~~**105.7.10 Spraying or dipping.** A construction permit is required to install or modify a spray room, dip tank or booth.~~

~~**105.7.11 Standpipe systems.** A construction permit is required for the installation, modification, or removal from service of a standpipe system. Maintenance performed in accordance with this code is not considered a modification and does not require a permit.~~

~~**105.7.12 Temporary membrane structures, tents and canopies.** A construction permit is required to erect an air-supported temporary membrane structure or a tent having an area in excess of 200 square feet (19 m²), or a canopy in excess of 400 square feet (37 m²).~~

~~**Exceptions:**~~

~~1. Tents used exclusively for recreational camping purposes.~~

~~2. Funeral tents and curtains or extensions attached thereto, when used for funeral services.~~

~~3. Fabric canopies and awnings open on all sides which comply with all of the following:~~

~~3.1. Individual canopies shall have a maximum size of 700 square feet (65 m²).~~

~~3.2. The aggregate area of multiple canopies placed side by side without a fire break clearance of 12 feet shall not exceed 700 square feet (3658 mm) total.~~

~~3.3. A minimum clearance of 12 feet (3658 mm) to structures and other tents shall be maintained.~~

105.8 Permit and inspection fees. Fees shall be assessed and shall be payable to the jurisdiction for the permits and inspections as provided in Sections 105.8.1 through 105.8.3.3 and Table 105.8.

105.8.1 General. All fees are annual unless otherwise provided in this code or by regulation of the code official. See Table 105.8 for the fee schedule for fire permits.

Note: See Sections 105.9 and 105.10 for additional provisions regarding administrative processing fees, receipt fees, correction fees, replacement fees, and refunds.

105.8.2 Re-inspection fee. Whenever it becomes necessary to make a reinspection because of faulty material, faulty workmanship, incomplete work or for any other reason, the permit holder shall pay for each reinspection a fee of $150.00, except where a greater fee is specifically required by this code.

105.8.3 Requested inspections (fire marshal approval). Whenever a person requests that an inspector conduct an inspection, or perform other duties not specified in this code and not in connection with a permit required under this code, the jurisdiction shall provide the service upon payment of a minimum fee of $125.00 for the first hour or portion thereof, and $62.50 for each additional hour or portion thereof, if the service would not interfere with the regular duties of the inspector. A deposit may be required for the anticipated cost prior to the commencement of the inspection. Examples include, but are not limited to, inspections requested by persons who are applying for state or federal permits that have provisions for a fire inspection and compliance inspections requested in connection with real estate transactions.

This fee shall be in addition to all other fees required by this code.

105.8.3.1 Priority inspection. Whenever a person requests an inspector to perform an inspection, or other duties specified in this code, at a specific time, rather than at the convenience of the jurisdiction, the service shall be provided upon payment of a $150.00 priority inspection fee, if the priority service would not interfere with the regular duties of the inspector.

This fee shall be in addition to all other fees required by this code. Also see Section 105.8.3.

105.8.3.2 Requested inspection (outside of regular working hours). Whenever a person requests that an inspector, or other classified firefighter authorized by the fire chief, conduct an inspection or perform other fire protection duties specified in this code, at times other than during regular working hours, or on a holiday observed by the jurisdiction or weekend, the jurisdiction shall provide the personnel upon payment of the following fees, as applicable, if it would not interfere with the regular duties of the personnel or cause an undue burden on the personnel.

Fees for inspection outside of regular working hours:

Up to 4 hours . . . . . $ 280.00

Each additional hour or portion of an hour . . . . . $ 62.50

This fee shall be in addition to all other fees required by this code.

105.8.3.3 Exemption from permits and fees. To the extent that the State of Texas or the United States of America are exempt as a matter of law from compliance with this code, a permit shall not be required for work performed by or on the premises of either of those entities. However, the fees set forth in this code shall be applicable to the extent that the State of Texas or the United States of America elects to obtain a permit for exempt work.

Except for work undertaken by or on the premises of the State of Texas or the United States of America, permits shall be required for work performed by or for any political subdivision or unit of government (including, but not limited to, the jurisdiction) in the same manner and to the same extent as for work performed by or for other persons. The fees

prescribed in this chapter shall be applicable to all permits issued to or for governmental agencies except counties and the jurisdiction. The jurisdiction and counties are exempted from the payment of fees. The exemption for the jurisdiction and for counties shall extend only to work to be performed by or for the jurisdiction or a county itself as a body corporate and politic. Furthermore, the exemption for a county shall not extend to work performed by or on the premises of units of government that, although affiliated with a county, have separate governmental existence from the county, including but not limited to, hospital districts and flood control districts.

TABLE 105.8
FEE SCHEDULE FOR FIRE PERMITS

SECTION REFERENCE NUMBER	PERMIT DESCRIPTION	FEE FOR ORIGINAL PERMIT AND EACH RENEWAL THEREOF
105.6.1	Aerosol products	$326
105.6.2	Apparatus access, road access-control gates	See 2 below
105.6.3	Aviation facilities Aircraft refueling vehicles Aircraft service or repair occupancy	 See 1 below $350
105.6.4	Carnivals, festivals, trade show exhibitions and fairs	See 3 below
105.6.5	Battery systems	No Fee
105.6.6	Cellulose nitrate film use or storage	$250
105.6.7	Combustible dust-producing operations	$326
105.6.8	Combustible fibers	$326
105.6.9	Compressed gases	$250
105.6.10	Covered mall buildings	$500
105.6.11	Cryogenic fluids	$250
105.6.12	Reserved	
105.6.13	Dry cleaning plants	$350
105.6.14	Reserved	
105.6.15	Explosives, fireworks, and pyrotechnics	$350
105.6.16	Fire depository, key boxes	See 2 below

Houston Amendments

105.6.17	Flammable and combustible liquids Parts 1-5, 7, 8 Part 6	 $290 See 7 below
105.6.18	Floor finishing	$290
105.6.19	Fruit and crop ripening	$250
105.6.20	Fumigation and thermal insecticidal fogging	$102
105.6.21	Hazardous materials	$350
105.6.22	Reserved	No fee
105.6.23	High-piled storage	$250
105.6.24	Hot work operations	$150
105.6.25	Industrial ovens	$250
105.6.26	Lumber yards and woodworking plants	$250
105.6.27	Liquid- or gas-fueled vehicles or equipment in assembly buildings	See 4 below
105.6.28	LP-gas	$250
105.6.29	Magnesium	$500
105.6.30	Miscellaneous combustible storage	See 2 below
105.6.31	Open burning	$250
105.6.32	Open flames and candles	$102
105.6.33	Organic coatings	$326
105.6.34	Places of assembly 50-100 occupants 101-299 occupants 300+ occupants	 $150 $250 $350
105.6.35	Reserved	
105.6.36	Reserved	
105.6.37	Pyroxylin plastics	$250
105.6.38	Reserved	
105.6.39	Motor vehicle fuel-dispensing stations	$225
105.6.40	Rooftop heliports	$150
105.6.41	Spraying or dipping	$290

Houston Amendments

105.6.42	Storage of scrap tires and tire byproducts	$250
105.6.43	Temporary membrane structures, tents and canopies	$176
105.6.44	Tire-rebuilding plants	$150
105.6.45	Waste handling	$150
105.6.46	Wood products	$150
105.6.47	Asphalt kettles and roof torching operations Asphalt kettles Ignited torches - (annual repair permit) Site specific permit	 See 5 below See 6 below $150

1. $102 for first unit, $76 each for additional units; not to exceed $350 per site
2. $75 for one unit; $150 for two or more units per site
3. $326 for carnivals and fairs; no fee for festivals and exhibitions
4. $110 for first unit, $75 each for additional units; not to exceed $260 per site
5. $110 for first kettle; $70 for each additional kettle; not to exceed $320 per owner
6. $102 for first torch; $76 for each additional torch; not to exceed $500 per owner
7. $175 for one tank; $250 for two tanks; $290 for three or more tanks per site

105.9 Administrative fees.

105.9.1 Permit or license. An administrative fee of $5.00 shall be charged upon the preparation of each permit or license issued by the fire department. This fee shall apply regardless of whether the permit or license is issued pursuant to this code or the *City Code*, and it shall be payable in addition to all other applicable fees for the permit or license. The foregoing administrative fee shall not be applicable if no other fee is provided by law for the permit or license.

105.9.2 Receipt. An administrative fee of $5.00 shall be charged upon the preparation of each fee or deposit receipt issued by the fire department. This fee shall apply regardless of whether the fee or deposit is payable pursuant to this code or the *City Code*. This fee shall be in addition to all other applicable fees or deposits. When paid for a deposit or fee receipt, this fee shall neither constitute nor be refundable as a part of the deposit. This fee shall not apply when a permit or license is issued and the fee specified in Section 105.9.1 above is imposed.

105.9.3 Correction fee. A correction fee of $5.00 shall be charged for correction of any license or permit in those instances where the license or permit is initially issued with an error cause by incorrect information having been furnished by the applicant. A re-inspection fee shall also be imposed as provided in Section 105.8.2 when the error causes a re-inspection to be required.

105.9.4 Replacement fee. A fee of $25.00 shall be charged for replacement of any permit that is lost or requires replacement for other reasons, such as a change of the permit holder's name.

105.10 Refunds. The fire marshal may authorize refunding of any fee paid hereunder that was erroneously paid or collected due to an error by one or more employees of the jurisdiction. This

provision shall not be applicable if the error occurred because of incorrect information provided by the applicant.

The fire marshal may authorize the refunding of not more than 90 percent of the amount in excess of $25.00 of the permit fee paid when no inspection has been performed under a permit issued in accordance with this code. If an inspection has been performed under the permit, no refund may be authorized.

The fire marshal shall not authorize refunding of any fee paid except on written application filed by the original permittee not later than 180 days after the date of fee payment.

108.1 Board of appeals established. In order to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals consisting of members who are qualified by experience and training to pass on matters pertaining to this code ~~and who are not employees of the jurisdiction~~. The code official shall be an ex officio member of said board ~~but shall have no vote on any matter before the board~~. The board of appeals shall be appointed by the Mayor, subject to confirmation by the City Council ~~governing body and shall hold office at its pleasure~~. The board shall adopt rules of procedure for conducting its business, and shall render all decisions and findings in writing to the appellant with a duplicate copy to the code official. See Appendix A.

109.2.3 Prosecution of violations. If the notice of violation is not complied with promptly or if persons operating or maintaining an occupancy, premises or vehicle subject to this code allow a hazard to exist or fail to take immediate action to abate a hazard on the occupancy, premises or vehicle when ordered to do so by the code official, the code official is authorized to request the legal counsel of the jurisdiction to institute the appropriate legal proceedings at law or in equity to restrain, correct or abate such violation or to require removal or termination of the unlawful occupancy of the structure in violation of the provisions of this code or of the order or direction made pursuant thereto.

109.3 ~~Violation penalties.~~ ~~Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the code official, or of a permit or certificate used under provisions of this code, shall be guilty of a [SPECIFY OFFENSE], punishable by a fine of not more than [AMOUNT] dollars or by imprisonment not exceeding [NUMBER OF DAYS], or both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense.~~ **General Penalty; Continuing Violations.** When in this code an act is prohibited or is made or declared to be unlawful or an offense or misdemeanor, or wherever in this code the doing of any act is required or the failure to do any act is declared to be unlawful and no specific penalty is provided therefore, the violation of any such provision of this

code shall be punished by a fine of not less than $500.00, nor more than $2,000.00; provided, however, that no penalty shall be greater or lesser than the penalty provided for the same offense under the laws of the state. Each day any violation of this code shall continue shall constitute a separate offense. In prosecutions under this code, the various provisions hereof that are designated as exceptions shall not be treated as exceptions within the meaning of Section 2.02 of the Texas Penal Code, and instead, they shall constitute defenses to persecution within the meaning of Section 2.03 of the Texas Penal Code.

109.3.1 ~~Abatement of violation.~~ ~~In addition to the imposition of the penalties herein described, the code official is authorized to institute appropriate action to prevent unlawful construction or to restrain, correct or abate a violation; or to prevent illegal occupancy of a structure or premises; or to stop an illegal act, conduct of business or occupancy of a structure on or about any premises.~~ **License suspension - revocation.** The suspension, revocation, cancellation or denial of any license, permit or certificate by the jurisdiction shall not prohibit the imposition of any civil or criminal penalty. The imposition of a civil or criminal penalty by the jurisdiction shall not prohibit the suspension, revocation, cancellation or denial of any license, permit or certificate.

109.3.2 Enforced removal or abatement. The application of the foregoing penalty shall not be held to prevent the enforced removal or abatement of any prohibited condition.

109.3.3 Administrative adjudication. The provisions of Article XVI of Chapter 45 of the *City Code* shall be applicable to the adjudication of any offense arising under this code that involves the parking or stopping of a vehicle. The fines for parking or stopping of a vehicle shall be as otherwise provided in this section or other provisions of this code, as applicable, but the citation shall be issued and adjudicated in all respects as provided in Article XVI of Chapter 45 of the *City Code*.

109.3.4 Abatement of violation. In addition to the imposition of the penalties herein described, the code official is authorized to institute appropriate action to prevent unlawful construction or to restrain, correct or abate a violation; or to prevent illegal occupancy of a structure or premises; or to stop an illegal act, conduct of business or occupancy of a structure on or about any premises.

110.1 General. If during the inspection of a premises, a building or structure or any building system, in whole or in part, constitutes a clear and inimical threat to human life, safety or health, the code official shall issue such notice or orders to remove or remedy the conditions as shall be deemed necessary in accordance with this section and shall refer the building to the building department for any repairs, alterations, remodeling, removing or demolition required in accordance with the *Construction Code* and the procedures set forth in Articles VIII and IX of Chapter 10 of the *City Code* and this section.

111.2.1 Hearing. The notice issued for the stop order shall advise that the recipient has a right to a hearing upon the matter before the code official. Upon request, a hearing shall be held within

three business days, unless the person receiving the stop order requests an extension of time. Hearings shall be conducted according to regulations established by the code official for that purpose.

111.4 Failure to comply. It shall be unlawful to fail to comply with any stop work order. ~~Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than [AMOUNT] dollars or more than [AMOUNT] dollars.~~

SECTION 112
STANDBY PERSONNEL

112.1 General. The code official is authorized to require that standby inspectors be provided when deemed necessary to ensure public safety due to number of persons present, or the nature of a performance, exhibition, display, contest or activity. The code official is also authorized to require standby personnel as a condition for:

1. Approval of any permit required in Section 105 of this code.
2. The issuance of a temporary certificate of occupancy by the building official.
3. Where insufficient adequacy or means of exit egress or other safety hazard may exist at a public assembly.
4. Where required fire protection or life safety systems may be severely impaired or out of service.
5. As provided in Section 2416.

112.2 Payment of fees. When required, the owner, agent or lessee shall employ one or more approved standby personnel to be on duty in accordance with this section. The jurisdiction shall provide the standby personnel upon payment of the fees specified in Section 105.8.3 of this code. The standby personnel shall be assigned at times other than during their regular working hours and shall be subject to the fire chief's or code official's orders at all times when so employed. Personnel shall be in uniform and remain on duty during the times and at the places required to comply with the code official's requirement as established under Section 112.1.

112.3 Standby inspectors. When required by the code official, standby inspectors shall be provided to ensure compliance with this code and/or other laws, including ordinances of the jurisdiction. Standby inspectors shall be state-certified fire inspectors who are assigned to the Fire Prevention Bureau of the Houston Fire Department.

CHAPTER 2
DEFINITIONS

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies. *Webster's Third New International Dictionary of the English Language, Unabridged*, copyright 1986, shall be considered as providing ordinarily accepted meanings.

SECTION 202
GENERAL DEFINITIONS

BUILDING OFFICIAL. The jurisdiction's Director of Planning and Development and those of the Director's staff members wh o are assigned responsibility for enforcement of the *Construction Code*.

CITY CODE. The *Code of Ordinances of the City of Houston, Texas*, as amended.

CODE OFFICIAL. The ~~fire chief, the~~ Fire Marshal of the jurisdiction~~, code enforcement officer, or other and designated authority charged by the applicable governing body with the duties of administration and enforcement of the code,~~ or a duly authorized representative.

CONSTRUCTION CODE. The *Building Code*, *Electrical Code*, *Mechanical Code*, and *Plumbing Code* of the jurisdiction and the *International Residential Code* and *International Energy Conservation Code* as adopted by the State of Texas and amended by the jurisdiction.

FIRE WATCH. A temporary measure, when required by the code official, that is intended to ensure continuous and systematic surveillance of a building or portion thereof by one or more qualified individuals for the purposes of identifying and controlling fire hazards, detecting early signs of unwanted fire, raising an alarm of fire and notifying the fire department.

JURISDICTION. The City of Houston.

Houston Amendments

[B] OCCUPANCY CLASSIFICATION. For the purposes of this code, certain occupancies are defined as follows:

[B] Assembly Group A. Group A occupancy includes, among others, the use of a building or structure, or a portion thereof, for the gathering together of persons for purposes such as civic, social or religious functions, recreation, food or drink consumption or awaiting transportation. A room or space used for assembly purposes by less than 50 persons and accessory to another occupancy shall be included as a part of that occupancy. Assembly occupancies shall include the following:

A-1 Assembly uses, usually with fixed seating, intended for the production and viewing of the performing arts or motion pictures including, but not limited to:

Motion picture theaters
Television and radio studios admitting an audience
Symphony and concert halls
Theaters

A-2 Assembly uses intended for food and/or drink consumption including, but not limited to:

Banquet halls
Night clubs
Restaurants
Taverns and bars

A-3 Assembly uses intended for worship, recreation or amusement and other assembly uses not classified elsewhere in Group A, including, but not limited to:

Amusement arcades
Art galleries
~~Auditoriums~~
Bowling alleys
Churches
Community halls
Courtrooms
Dance halls (not including food or drink consumption)
Exhibition halls
Funeral parlors
Gymnasiums (without spectator seating)
Indoor swimming pools (without spectator seating)
Indoor tennis courts (without spectator seating)
Lecture halls
Libraries
Museums
Passenger stations (waiting area)

Pool and billiard parlors

A-4 Assembly uses intended for viewing of indoor sporting events and activities with spectator seating, including but not limited to:

Arenas
Skating rinks
Swimming pools
Tennis courts

A-5 Assembly uses intended for participation in or viewing outdoor activities including, but not limited to:

Amusement park structures
Bleachers
Grandstands
Stadiums

[B] Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

Airport traffic control towers
Animal hospitals, kennels, pounds
Assemblies with an occupant load less than 50
Banks
Barber and beauty shops
Car wash
Civic administration
Clinic—outpatient
Dry cleaning and laundries; pick-up and delivery stations and self-service
Educational occupancies above the 12th grade
Electronic data processing
Fire and police stations
Laboratories; testing and research
Motor vehicle showrooms
Post offices
Print shops
Professional services (architect, attorney, dentist, physician, engineer, etc.)
Radio and television stations
Telephone exchanges

[B] Educational Group E. Educational Group E occupancy includes, among others, the use of a building or structure, or a portion thereof, by six or more persons at any one time for educational purposes through the 12th grade.

Day care. The use of a building or structure, or portion thereof, for educational, supervision or personal care services for more than five children older than 2 ½ years of age shall be classified as an E occupancy.

[B] Factory Industrial Group F. Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous occupancy.

Factory Industrial F-1 Moderate-Hazard Occupancy. Factory Industrial uses which are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

Aircraft
Appliances
Athletic equipment
Automobiles and other motor vehicles
Bakeries
Beverages ~~(alcoholic)~~ over 12% in alcoholic content
Bicycles
Boats; building
Broom or brush
Business machines
Cameras and photo equipment
Canvas or similar fabric
Carpets and rugs (includes cleaning)
Clothing
Construction and agricultural machinery
Disinfectants
Dry cleaning and dyeing
Electric light plants and power houses
Electronics
Engines (including rebuilding)
Food processing
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metal
Millwork (sash & door)
Motion pictures and television filming
Musical instruments

Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood, distillation
Woodworking (cabinet)

Factory Industrial F-2 Low-Hazard Occupancy. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials which during finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

Beverages ~~(nonalcoholic)~~ up to and including 12% in alcoholic content
Brick and masonry
Ceramic products
Foundries
Glass products
Gypsum
Ice
Metal products (fabrication and assembly)

[B] Hazardous Group H. Hazardous Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those found in Tables 307.7(1) ~~through~~ and 307.7(~~4~~2) of the ~~*International Building Code*~~. (See also definition of "Control Area.")

Exception: Occupancies as provided for in the ~~*International Building Code*~~ shall not be classified in Group H, but shall be classified in the occupancy which they most nearly resemble.

Group H-1 structures. Buildings and structures which contain materials that pose a detonation hazard, shall be classified as Group H-1. Such materials shall include, but not be limited to:

The following classifications of explosives:

Division 1.1
Division 1.2
Division 1.3

Exception: Materials that are used and maintained in a form where either confinement or configuration will not elevate the hazard shall be allowed in an H-2 Occupancy.

Division 1.5
Division 1.6

Organic peroxides, unclassified detonable
Oxidizers, Class 4
Unstable (reactive) materials, Class 3 detonable, and Class 4
Detonable pyrophoric materials

Group H-2 structures. Buildings and structures which contain materials that pose a deflagration hazard or a hazard from accelerated burning, shall be classified as Group H-2. Such materials shall include, but not be limited to:

Class I, II or IIIA flammable or combustible liquids which are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 pounds per square inch gauge (103 kPa)
Combustible dusts
Cryogenic liquids, flammable
Flammable gases
Organic peroxides, Class I
Oxidizers, Class 3, that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 pounds per square inch gauge (103 kPa).
Pyrophoric liquids, solids and gases, nondetonable
Unstable (reactive) materials, Class 3, nondetonable
Water-reactive materials, Class 3

Group H-3 structures. Buildings and structures which contain materials that readily support combustion or pose a physical hazard, shall be classified as Group H-3. Such materials shall include, but not be limited to:

~~Aerosols, Level 2 and Level 3~~
Class I, II or IIIA flammable or combustible liquids which are used or stored in normally closed containers or systems pressurized at less than 15 pounds per square inch gauge (103 kPa)
Combustible fibers
~~Consumer fireworks, 1.4G (Class C, Common)~~
Cryogenic liquids, oxidizing
The following classifications of explosives:
Consumer fireworks, 1.4G (Class C Common)

Division 1.4 restricted to articles, including articles packaged for shipment that are not regulated as explosives under Bureau of Alcohol, Tobacco and Firearms regulations, or unpackaged articles used in process operations that do not propagate a detonation or deflagration between articles.

Flammable solids
Organic peroxides, Class II and Class III
Oxidizers~~, Class 1 and~~ Class 2
Oxidizers, Class 3, that are used or stored in normally closed containers or systems pressurized at less than 15 pounds per square inch gauge (103 kPa)
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2

Group H-4 structures. Buildings and structures which contain materials that are health hazards, shall be classified as Group H-4. Such materials shall include, but not be limited to:

Corrosives
Highly toxic materials
Toxic materials

Group H-5 structures. Semiconductor fabrication facilities and comparable research and development areas in which hazardous production materials ( ) are used and the aggregate quantity of materials is in excess of those listed in Tables 307.7(1) and 307.7(2) of the ~~*International*~~ *Building Code*. Such facilities and areas shall be designed and constructed in accordance with Section 415.9 of the ~~*International*~~ *Building Code*.

[B] Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which people having physical limitations because of health or age are harbored for medical treatment or other care or treatment, or in which people are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

Group I-1. This occupancy shall include a building or part thereof housing more than 16 persons, on a 24-hour basis, who because of age, mental disability or other reasons, live in a supervised residential environment but which provides personal care services. The occupants are capable of responding to an emergency situation without physical assistance from staff. This group shall include, but not be limited to, the following: residential board and care facilities, assisted living facilities, half-way houses, group homes, congregate care facilities, social rehabilitation facilities, alcohol and drug centers and convalescent facilities. A facility such as the above with five or less persons shall be classified as Group R-3. A facility such as above, housing at least six and not more than 16 persons shall be classified as Group R-4.

Group I-2. This occupancy shall include buildings and structures used for medical, surgical, psychiatric, nursing or custodial care on a 24-hour basis of more than five persons who are

not capable of self-preservation. This group shall include, but not be limited to the following: hospitals, nursing homes (both intermediate care facilities and skilled nursing facilities), mental hospitals and detoxification facilities. A facility such as the above with five or less persons shall be classified as Group R-3.

Child care facility. A child care facility which provides care on a 24-hour basis to more than five children 2 ½ years of age or less shall be classified as Group I-2.

Group I-3. This occupancy shall include buildings and structures which are inhabited by more than five persons who are under restraint or security. An I-3 facility is occupied by persons who are generally incapable of self preservation due to security measures not under the occupants' control. This group shall include, but not be limited to, the following: prisons, jails, reformatories, detention centers, correctional centers and prerelease centers. Buildings of Group I-3 shall be classified as one of the occupancy conditions indicated in Sections 308.4.1 through 308.4.5 (see Section 408.1) of the ~~*International* *Building Code*~~.

Condition 1. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and other spaces where access or occupancy is permitted, to the exterior via means of egress without restraint. A Condition 1 facility is permitted to be constructed as Group R.

Condition 2. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and any other occupied smoke compartment to one or more other smoke compartments. Egress to the exterior is impeded by locked exits.

Condition 3. This occupancy condition shall include buildings in which free movement is allowed within individual smoke compartments, such as within a residential unit comprised of individual sleeping rooms and group activity spaces, where egress is impeded by remote-controlled release of means of egress from such smoke compartment to another smoke compartment.

Condition 4. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from sleeping rooms, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

Condition 5. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from sleeping rooms, activity spaces and other occupied areas within the smoke compartment to other smoke compartments.

Group I-4, day care facilities. This group shall include buildings and structures occupied by persons of any age who receive custodial care for less than 24 hours by individuals other than parents or guardians, relatives by blood, marriage, or adoption, and in a place other than the home of the person cared for. A facility such as the above with five or fewer persons

shall be classified as Group R-3. Places of worship during religious functions are not included.

Adult care facility. A facility that provides accommodations for less than 24 hours for more than five unrelated adults and provides supervision and personal care services.

Child care facility. A facility that provides supervision and personal care on less than a 24-hour basis for more than five children 21/2 years of age or less shall be classified as Group 1-4 (see definitions).

Exception: A child day care facility which provides care for more than five but no more than 100 children 21/2 years or less of age, when the rooms where such children are cared for are located on the level of exit discharge and each of these child care rooms has an exit door directly to the exterior, shall be classified as Group E.

[B] Mercantile Group M. Mercantile Group M occupancy includes, among others, buildings and structures or a portion thereof, for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following.

Department stores
Drug stores
Markets
Motor vehicle service stations
Retail or wholesale stores
Sales rooms

[B] Residential Group R. Residential Group R occupancy includes, among others, the use of a building or structure, or a portion thereof, for sleeping accommodations when not classed as an Institutional Group I. Residential occupancies shall include the following:

R-1 Residential occupancies where the occupants are primarily transient in nature (less than 30 days) including:

Boarding houses (transient)
Hotels (including motels)

R-2 Residential occupancies containing more than two dwelling units where the occupants are primarily permanent in nature, including:

Apartment houses
Boarding houses (not transient)
Convents
Dormitories
Fraternities and sororities
Monasteries

R-3 Residential occupancies where the occupants are primarily permanent in nature and not classified as R-l, R-2 or I, and where buildings do not contain more than two dwelling units or adult and child care facilities, that provide accommodation five or fewer persons of any age for less than 24 hours shall be classified as Group R-3.

R-4 Residential occupancies shall include buildings arranged for occupancy as Residential Care/Assisted Living Facilities including more than five but not more than 16 occupants, excluding staff.

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3 except for the height and area limitations provided in Section 503 of the ~~*International* ~~*Building Code*.

[B] Storage Group S. Storage Group S occupancy includes, among others, the use of a building or structure, or a portion thereof, for storage that is not classed as a hazardous occupancy.

Moderate-hazard storage, Group S-1. Buildings occupied for storage uses which are not classified as Group S-2 including, but not limited to, storage of the following:

Aerosols, Level 2 and Level 3
Aircraft hangar
Bags, cloth, burlap and paper
Bamboo and rattan
Baskets
Belting, canvas and leather
Books and paper in rolls or packs
Boots and shoes
Buttons, including cloth covered, pearl or bone
Cardboard and cardboard boxes
Clothing, woolen wearing apparel
Cordage
Furniture
Furs
Glue, mucilage, paste and size
Grain
Horn and combs, other than celluloid
Leather
Linoleum
Lumber
Motor vehicle repair garages (complying with ~~*International* ~~*Building Code* and containing less than the maximum allowable quantities of hazardous materials)
Petroleum warehouses for storage of lubricating oils with a flash point of 200/F (93 OC) or higher
Photo engraving
Resilient flooring

Silk
Soap
Sugar
Tires, bulk storage of
Tobacco, cigars, cigarettes and snuff
Upholstering and mattress
Wax candles

Low-hazard storage, Group S-2. Includes, among others, buildings used for the storage of noncombustible materials such as products on wood pallets or in paper cartons with or without single thickness divisions; or in paper wrappings. Such products may have a negligible amount of plastic trim such as knobs, handles, or film wrapping. Storage uses include, but are not limited to, storage of the following:

Asbestos
Beer or wine up to 12-percent alcohol in metal, glass or ceramic containers
Cement in bags
Chalk and crayons
Dairy products in nonwaxed coated paper containers
Dry cell batteries
Electrical coils
Electrical motors
Empty cans
Food products
Foods in noncombustible containers
Fresh fruits and vegetables in nonplastic trays or containers
Frozen foods
Glass
Glass bottles, empty or filled with noncombustible liquids
Gypsum board
Inert pigments
Ivory
Meats
Metal cabinets
Metal desks with plastic tops and trim
Metal parts
Metals
Mirrors
Oil-filled and other types of distribution transformers
Parking garages (open or enclosed)
Porcelain and pottery
Stoves
Talc and soapstones

Washers and dryers

Miscellaneous Group U. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this code commensurate with the fire and life hazard incidental to their occupancy. Group U shall include, but not be limited to, the following:

Agricultural buildings
Aircraft hangar, accessory to a one-or two-family residence (see Section 412.3.1 of the ~~*International*~~ *Building Code)*
Barns
Carports
Fences more than 6 feet (1829 mm) high
Grain silos, accessory to a residential occupancy
Greenhouses
Livestock shelters
Private garages
Retaining walls
Sheds
Stables
Tanks
Towers

TRADE SHOW. A temporary commercial exhibition or show for the purpose of display of manufactured products to prospective customers. See Section 105.6.4.

***NOTE: All other portions of Section 202 remain as set forth in the International Fire Code.**

SECTION 203
DISTRICTS OF LIMITATIONS

203.1 Boundaries specified. The districts referred to in this code in which the storage of explosives and blasting agents, the storage of flammable and combustible liquids, the storage of compressed and liquefied natural gases and the storage of LP-gases are prohibited, are hereby established.

203.1.1 District of Limitations No. 1. Beginning at the intersection of US Highway 59 with Pierce Street; thence, northerly along US Highway 59 to the centerline of Buffalo Bayou; thence, westerly following the meanders of the centerline of Buffalo Bayou to Franklin Street; thence, westerly along Franklin Street to Interstate Highway 45; thence, southerly along Interstate

Highway 45 to Pierce Street; thence, easterly along Pierce Street to U. S. Highway 59, the place of beginning.

203.1.2 District of Limitations No. 2. Beginning at the intersection of Main Street with N. MacGregor Way; thence, southerly along Main Street to Holcombe Boulevard; thence easterly along Holcombe Boulevard to South Braeswood Boulevard; thence northerly along South Braeswood Boulevard to North MacGregor Way; thence westerly along North MacGregor Way to Main Street, the place of beginning.

CHAPTER 3
GENERAL PRECAUTIONS AGAINST FIRE

301.2 Permits. Permits shall be required as set forth in Section 105.6 for the activities or uses regulated by Sections 303, 304, 306, 307, 308, ~~308.3, 308.4, 308.5~~ and 315.

303.1 Transporting. Asphalt (tar) kettles shall not be transported over any highway, road or street when the heat source for the kettle is operating. Kettle lids shall be closed and latched while in transit. Kettle contents shall be allowed to cool to a viscosity such that they cannot spill should the kettle overturn while in transit.

Exception: Asphalt (tar) kettles in the process of patching road surfaces.

303.2 Location. Asphalt (tar) kettles shall not be located within 20 feet (6096 mm) of any combustible material, combustible building surface or any building opening and within a controlled area identified by the use of traffic cones, barriers or other approved means. Asphalt (tar) kettles and pots shall not be utilized inside ~~or on the roof~~ of a building or structure. Asphalt (tar) kettles shall not be used on the roof of a building or structure except when in accordance with Houston Fire Department LSB Standard No. 11, "Roofing Operations." Roofing kettles and operating asphalt (tar) kettles shall not block means of egress, gates, roadways or entrances.

303.3 Location of fuel containers. Fuel containers shall be located at least 10 feet (3048 mm) from the burner. All portable fuel containers shall be adequately secured to prevent containers from falling or being knocked over.

Exceptions:

1. Containers properly insulated from heat or flame are allowed to be within 2 feet (610 mm) of the burner.
2. LP-gas containers connected for use shall be kept a minimum of 15 feet (4572 mm) from burners. LP-gas containers not connected for use shall be kept a minimum of 25 feet (7620 mm) from burners.

304.3.3 Capacity exceeding 1.5 cubic yards (rubbish within dumpsters). Dumpsters and containers with an individual capacity ~~of~~ between 1.5 cubic yards (40.5 cubic feet) (1.15 m^3) and 15 cubic yards (405 cubic feet) (12 m^3) ~~or more~~ shall not be stored in buildings or placed within 5 feet (1524 mm) of combustible walls, metal walls, building openings or ~~combustible~~ roof eave lines. Dumpsters and containers 15 cubic yards (405 cubic feet) (12 m^3) capacity , or more, shall be a minimum 10 feet (3 m) from combustible walls, metal walls, building openings, or roof eave lines. Dumpsters and containers shall not be placed on public sidewalks, streets, or other public

property. No rubbish or combustible waste shall be placed, stored or allowed to accumulate outside of dumpsters or containers. Lids of dumpsters shall be kept closed at all times.

Exceptions:

1. Dumpsters or containers in areas protected by an approved automatic sprinkler system complying with Chapter 9.
2. Storage in a structure shall not be prohibited where the structure is of Type I or Type IIA construction, located not less than 10 feet (3048 mm) from other buildings and used exclusively for dumpster or container storage.
3. Dumpsters placed in the street right of way by governmental authorities on a temporary basis for neighborhood clean up campaigns, provided neither the roadway, nor fire apparatus access nor fire hydrants are obstructed and no other location is practicably available.
4. Dumpsters placed on a temporary basis for demolition or construction work under a valid building permit, provided neither the roadway, nor fire apparatus access nor fire hydrants are obstructed and no other location is practicably available.
5. Approved containers placed for collection on street rights-of-way as authorized by Chapter 39 of the *City Code*.

304.4 Dumpster information required. The name of the dumpster company or responsible party and a contact telephone number shall be placed on dumpsters and other bulk containers as provided by Section 39-97 of the *City Code*.

305.1 Clearance from ignition sources. Clearance between ignition sources, such as light fixtures, heaters, and flame-producing devices, and combustible materials shall be maintained in an approved manner. The clearance between combustible materials and unit heaters, radiant heaters, duct furnaces, flues and other heat producing devices shall be in accordance with the clearances shown on the product listing, but in no case shall be less than 3 feet (914.4 mm) in all directions, except as provided for in the *Building Code*.

305.4 Deliberate or negligent burning. It shall be unlawful to deliberately or through negligence set fire to or cause the burning of combustible material in such a manner as to attract attention, create a disturbance or fire hazard, or endanger the safety of persons or property.

307.1 General. Open burning and recreational fires are prohibited. A person shall not kindle, maintain, or authorize to be kindled or maintained any open burning or recreational fire. ~~unless conducted and approved in accordance with this section.~~

Exception: When approved by the code official, and where consistent with state, federal and local environmental laws and regulations, open burning shall be conducted in accordance with Houston Fire Department LSB Standard No. 16, "Open Burning and Recreational Fires." A permit is required for any fire authorized under this exception.

307.2 Reserved. ~~**Permit required.** A permit shall be obtained from the code official in accordance with Section 105.6 prior to kindling a fire for recognized silvicultural or range or wildlife management practices, prevention or control of disease or pests, or a bonfire. Application for such approval shall only be presented by and permits issued to the owner of the land upon which the fire is to be kindled.~~

~~**307.2.1 Authorization.** Where required by state or local law or regulations, open burning shall only be permitted with prior approval from the state or local air and water quality management authority, provided that all conditions specified in the authorization are followed.~~

~~**307.2.2 Prohibited open burning.** Open burning that will be offensive or objectionable due to smoke or odor emissions when atmospheric conditions or local circumstances make such fires hazardous shall be prohibited. The code official is authorized to order the extinguishment by the permit holder or the fire department of open burning which creates or adds to a hazardous or objectionable situation.~~

307.3 Reserved. ~~**Location.** The location for open burning shall not be less than 50 feet (15 240 mm) from any structure, and provisions shall be made to prevent the fire from spreading to within 50 feet (15 240 mm) of any structure.~~

~~**Exceptions:**~~

~~1. Fires in approved containers that are not less than 15 feet (4572 mm) from a structure.~~

~~2. The minimum required distance from a structure shall be 25 feet (7620 mm) where the pile size is 3 feet (914 mm) or less in diameter and 2 feet (610 mm) or less in height.~~

~~**307.3.1 Bonfires.** A bonfire shall not be conducted within 25 feet (7620 mm) of a structure or combustible material unless the bonfire is contained in a barbecue pit. Conditions which could cause a fire to spread within 25 feet (7620 mm) of a structure shall be eliminated prior to ignition.~~

~~**307.3.2 Recreational fires.** Recreational fires shall not be conducted within 25 feet (7620 mm) of a structure or combustible material unless the fire is contained in a barbecue pit. Conditions which could cause a fire to spread within 25 feet (7620 mm) of a structure shall be eliminated prior to ignition.~~

307.4 Reserved. ~~**Attendance.** Open burning, bonfires or recreational fires shall be constantly attended until the fire is extinguished. A minimum of one portable fire extinguisher complying with~~

~~Section 906 with a minimum 4-A rating or other approved on-site fire-extinguishing equipment, such as dirt, sand, water barrel, garden hose or water truck, shall be available for immediate utilization.~~

307.6 Salvage burning operations. The burning of salvage vehicles and salvage materials or waste is prohibited.

309.7 Vehicle fire extinguishers. Vehicle fire extinguishers with minimum rating of 10-B:C shall be provided and properly mounted on each liquid-fuel or LP-gas powered industrial truck.

311.1.1 Abandoned premises. Buildings, structures and premises for which an owner cannot be identified or located ~~by dispatch of a certificate of mailing to the last known or registered address~~, which persistently or repeatedly become unprotected or unsecured, which have been occupied by unauthorized persons or for illegal purposes, or which present a danger of structural collapse or fire spread to adjacent properties shall be considered abandoned, declared unsafe and abated by demolition or rehabilitation in accordance with the procedures set forth in Chapter 10, Articles VIII and IX of the *City Code*. ~~*International Property Maintenance Code* and the *International Building Code*~~.

~~**311.1.2 Tenant spaces.** Storage and lease plans required by this code shall be revised and updated to reflect temporary or partial vacancies.~~

311.3 Removal of waste. Persons owning, or in charge or control of, a vacant building or portion thereof, shall remove therefrom all accumulations of flammable or combustible waste or rubbish and shall securely lock or otherwise secure doors, windows and other openings to prevent entry by unauthorized persons. The premises shall be maintained clear of waste or hazardous materials.

Exceptions:

1. Buildings or portions of buildings undergoing additions, alterations, repairs, or change of occupancy in accordance with the ~~*International*~~ *Building Code*, where waste is controlled and removed as required by Section 304.
2. ~~Seasonally occupied buildings.~~

314.3 Highly combustible goods. The display of highly combustible goods, including but not limited to ~~fireworks,~~ flammable or combustible liquids, liquefied flammable gases, oxidizing materials, pyroxylin plastics and agricultural goods, in main exit access aisles, corridors, covered

malls, or within 5 feet (1524 mm) of entrances to exits and exterior exit doors is prohibited when a fire involving such goods would rapidly prevent or obstruct egress.

315.1 General. Storage, accumulation, use and handling of miscellaneous combustible materials shall be in accordance with this section. A permit shall be obtained in accordance with Section 105.6.

315.4 Pallet storage. Indoor and outdoor storage of idle pallets shall be in accordance with Section 315 and NFPA 231.

CHAPTER 4
EMERGENCY PLANNING AND PREPAREDNESS

401.3 Emergency forces notification. In the event an unwanted fire occurs or upon the discovery of a fire, smoke or unauthorized release of flammable or hazardous materials on ~~a~~ any property, the owner or occupant shall immediately report such condition to the Fire Department. Building employees and tenants shall implement the appropriate emergency plans and procedures and notify the Fire Department as soon as notice can safely be given. No person shall, by verbal or written directive, require any delay in the reporting of a fire to the fire department.

403.1 General. ~~In other than Group A or E occupancies,~~ Where the code official determines that an indoor or outdoor gathering of persons has an adverse impact on public safety through diminished access to buildings, structures, fire hydrants and fire apparatus access roads or where such gatherings adversely affect public safety services of any kind, the code official shall have the authority to order the development of, or prescribe a plan for, the provision of an approved level of public safety.

403.2 Contents. The public safety plan, where required by Section 403.1, shall address such items as emergency vehicle ingress and egress, fire protection, emergency medical services, public assembly areas and the directing of both attendees and vehicles (including the parking of vehicles), vendor and food concession distribution, and the need for the presence of law enforcement, ~~and~~ fire and emergency medical services and fire department standby personnel at the event, in accordance with Section 112.

404.1 General. ~~Fire safety and evacuation plans shall comply with the requirements of this section~~. The code official is authorized to require that emergency plans, employee duty assignments, employee training and fire drills be provided in buildings of any occupancy type. When required, emergency plans, employee duty assignments, employee training and fire drills shall be conducted in accordance with this chapter and Houston Fire Department LSB Standard No. 08, "Fire Drills."

404.2 Where required. When required by the code official and where local fire marshal approvals are required by other regulatory agencies, ~~An~~ a ~~approved~~ fire safety and evacuation plan shall be prepared and maintained for the following occupancies and buildings.

1. Group A, other than Group A occupancies used exclusively for purposes of religious worship that have an occupant load less than 2,000.
2. Group E.
3. Group H, in accordance with Section 407.
4. Group I, as required by state, federal and other regulatory agencies.

5. Group R-1, and High-Rise R-1 in accordance with Houston Fire Department LSB Standard No. 07, "High-Rise Fire Safety Plans."
6. Group R-4, as required by state regulatory agencies.
7. High-rise buildings, shall be in accordance with Houston Fire Department LSB Standard No. 07, "High-Rise Fire Safety Plans."
8. Group M buildings having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.
9. Covered malls exceeding 50,000 square feet (4645 m²) in aggregate floor area.
10. Underground buildings.
11. Buildings with an atrium and having an occupancy in Group A, E or M.

404.3.1 Fire evacuation plans. Fire evacuation plans ~~shall~~ should include the following and any additional information as may be required by the code official:

1. Emergency egress or escape routes and alternate routes where available. ~~and whether evacuation of the building is to be complete or, where approved, by selected floors or areas only.~~
2. Procedures for building employees and security personnel who, when it is safe to do so, must remain to operate critical equipment before evacuating.
3. Procedures for accounting for employees and occupants after evacuation has been completed.
4. Identification ~~and assignment~~ of personnel who may need assistance with evacuation due to mobility impairment and personnel who may need to assist the mobility impaired. ~~responsible for rescue or emergency medical aid.~~
5. The preferred and any alternative means of notifying occupants of a fire or emergency.
6. The preferred and any alternative means of reporting fires and other emergencies to the fire department or designated emergency response organization.
7. Identification and assignment of personnel who can be contacted for further information or explanation of duties under the plan.
8. A description of the emergency voice/alarm communication system alert tone and preprogrammed voice messages, where provided.
9. All high-rise building evacuation plans shall conform to Houston Fire Department LSB Standard No. 07, "High-Rise Fire Safety Plans."

   Exception: Group I high-rise occupancies.

404.4 Maintenance. ~~Fire safety and~~ Emergency evacuation plans shall be reviewed or updated annually or as necessitated by changes in staff assignments, occupancy, or the physical arrangement of the building.

Exception: In high-rise occupancies, the emergency plans within fire depository boxes shall be reviewed and updated every six months to verify mobility impaired persons lists, emergency keys and any other data, in accordance with Houston Fire Department LSB Standard No. 06, "Fire Depository Boxes."

405.1 General. Emergency evacuation drills complying with the provisions of this section shall be conducted in any occupancy ~~the occupancies listed in Section 404.2 or~~ when required by the code official in accordance with Houston Fire Department LSB Standard No. 08, "Fire Drills." ~~Drills shall be designed in cooperation with the local authorities.~~ Evacuation drills in high-rise buildings shall also be conducted in accordance with Houston Fire Department LSB Standard No. 07, "High-Rise Fire Safety Plans."

405.2 Frequency. Fire drill frequency shall be in accordance with the Houston Fire Department LSB Standard No. 08, "Fire Drills," unless superceded by other regulatory agencies. ~~Required emergency evacuation drills shall be held at the intervals specified in Table 405.2 or more frequently where necessary to familiarize all occupants with the drill procedure.~~

~~**TABLE 405.2**~~
~~**FIRE AND EVACUATION DRILL**~~
~~**FREQUENCY AND PARTICIPATION**~~

~~GROUP OR OCCUPANCY~~	~~FREQUENCY [a]~~	~~PARTICIPATION~~
~~Group A~~	~~Quarterly~~	~~Employees~~
~~Group E~~	~~Monthly [a]~~	~~All occupants~~
~~Group I~~	~~Quarterly on each shift~~	~~Employees [b]~~
~~Group R-1~~	~~Quarterly on each shift~~	~~Employees~~
~~Group R-4~~	~~Quarterly on each shift~~	~~Employees [b]~~

~~a. The frequency shall be permitted to be modified in accordance with Section 408.3.2.~~

~~b. Fire and evacuation drills in residential care assisted living facilities shall include complete evacuation of the premises in accordance with Section 408.10.5. Where occupants receive habilitation or rehabilitation training, fire prevention and fire safety practices shall be included as part of the training program.~~

Houston Amendments

405.6 Notification. ~~Where required by the code official,~~ In buildings having fire alarm monitoring services, prior notification of emergency evacuation drills shall be given to the jurisdiction immediately prior to the drill ~~code official~~ by calling the Houston Fire Department Office of Emergency Communications, Telephone: (713) 222-7643, and to the building's fire alarm monitoring service. The Fire Department and the monitoring service shall be immediately notified at the conclusion of emergency evacuation drills, in accordance with Houston Fire Department LSB Standard No. 08, "Fire Drills."

405.9 Recall and reentry. An electrically or mechanically operated signal used to recall occupants after an evacuation shall be ~~separate and~~ distinct from the signal used to initiate the evacuation. The recall signal initiation means shall be manually operated and under the control of the person in charge of the premises or the official in charge of the incident. No one shall reenter the premises until authorized to do so by the official in charge.

406.1 General. ~~Employees in the occupancies listed in Section 404.2 shall be trained in the fire emergency procedures described in their fire evacuation and fire safety plans. Training shall be based on these plans and as described in Section 404.3.~~ When required by the code official, employees shall be assigned duties for emergencies and shall be trained in accordance with this section.

406.2 Reserved. ~~**Frequency.** Employees shall receive training in the contents of fire safety and evacuation plans and their duties as part of new employee orientation and at least annually thereafter. Records shall be kept and made available to the code official upon request.~~

406.3.3 Fire safety training. Employees assigned firefighting duties shall be trained to know the locations and proper use of portable fire extinguishers or other manual fire-fighting equipment and the protective clothing or equipment required for its safe and proper use. In high-rise buildings, Building Emergency Response Personnel (BERP) shall be trained in accordance with regulations established by the code official.

408.1 General. In addition to the other requirements of this chapter, the provisions of this section are applicable to specific occupancies listed herein. Where a provision of this section may conflict with specific requirements established by the code official, the code official's requirements shall control.

Note: Group I-4 occupancies shall conform to Sections 401 through 406 and Houston Fire Department LSB Standard No. 08, "Fire Drills."

408.2.1 Seating plans and permits. The fire safety and evacuation plans for assembly occupancies, including carnivals, festivals, fair grounds, and trade show exhibitions, shall be submitted when required by the code official. Plans shall include the information required by Section 404.3 and a detailed seating plan, occupant load, and occupant load limit. Deviations from the approved plans shall be allowed when approved by the code official, provided the occupant load limit for the occupancy is not exceeded and the aisles and exit accessways remain unobstructed.

Permits and plans are required to operate a place of assembly, or a carnival, festival or fair, to use liquid- or gas-fueled vehicles or equipment for competition or display inside an assembly occupancy, to use an assembly area for trade show exhibition purposes, or to use candles or other open-flame devices in assembly areas.

408.2.3 Communication. When required by the code official, places of assembly shall be provided with a method for notifying the fire department in the event of an emergency. The method may consist of a telephone, an alarm system connected to an approved agency, or other approved means. Methods of notifying the fire department shall be readily available to the public.

408.3 Group E occupancies. Group E occupancies shall comply with the requirements of Sections 408.3.1 through 408.3.4 and ~~Sections 401 through 406~~ Houston Fire Department LSB Standard No. 08, "Fire Drills."

408.3.1 First emergency evacuation drill. The first emergency evacuation drill of each school year ~~shall~~ is recommended but not required to be conducted within 10 days of the beginning of classes to familiarize the students and staff with the fire drill procedures.

408.3.2 Emergency evacuation drill deferral. ~~In severe climates, the code official shall have the authority to modify the emergency evacuation drill frequency specified in Section 405.2~~ Drills are not required during periods of inclement weather or when state mandated educational assessment testing is being conducted.

408.5 Group I-1 occupancies. Group I-1 occupancies shall comply with the requirements of Sections 408.5.1 through 408.5.5, ~~and~~ Sections 401 through 406, and Houston Fire Department LSB Standard No. 08, "Fire Drills."

408.5.4 Drill frequency. Emergency evacuation drills shall be conducted in accordance with Houston Fire Department LSB Standard No. 08, "Fire Drills." ~~at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.~~

Houston Amendments

408.6 Group I-2 occupancies. Group I-2 occupancies shall comply with the requirements of Sections 408.6.1 and 408.6.2, ~~and~~ Sections 401 through 406 and Houston Fire Department LSB Standard No. 08, "Fire Drills." ~~Drills are not required to comply with the time requirements of Section 405.4.~~

408.8 Group R-1 occupancies. Group R-1 occupancies shall comply with the requirements of Sections 408.8.1 through 408.8.3, ~~and~~ Sections 401 through 406 and Houston Fire Department LSB Standard No. 08, "Fire Drills." High-rise R-1 occupancies shall also be in accordance with Houston Fire Department LSB Standard No. 07, "High-Rise Fire Safety Plans."

408.9 Group R-2 occupancies. Group R-2 occupancies shall comply with the requirements of Sections ~~408.9.1 through 408.9.3 and Sections~~ 401 through 406.

~~**408.9.1 Emergency guide.** A fire emergency guide shall be provided which describes the location, function and use of fire protection equipment and appliances accessible to residents, including fire alarm systems, smoke alarms, and portable fire extinguishers. The guide shall also include an emergency evacuation plan for each dwelling unit.~~

~~**408.9.2 Maintenance.** Emergency guides shall be reviewed and approved in accordance with Section 401.2.~~

~~**408.9.3 Distribution.** A copy of the emergency guide shall be given to each tenant prior to initial occupancy.~~

408.10 Group R-4 occupancies. Group R-4 occupancies shall comply with the requirements of Sections 408.10.1 through 408.10.5, ~~and~~ Sections 401 through 406, and Houston Fire Department LSB Standard No. 08, "Fire Drills."

408.10.4 Drill frequency. Emergency evacuation drills shall be conducted in accordances with Houston Fire Department LSB Standard No. 08, "Fire Drills." ~~at least six times per year, two times per year on each shift. Twelve drills shall be conducted in the first year of operation. Drills are not required to comply with the time requirements of Section 405.4.~~

408.11.1.1 Approval. The lease plan shall be ~~submitted to the code official for approval, and shall be~~ maintained on site for immediate reference by responding fire service personnel and be available upon request by the code official.

~~**408.11.1.2 Revisions.** The lease plans shall be revised annually or as often as necessary to keep them current. Modifications or changes in tenants or occupancies shall not be made without prior approval of the code official and building official.~~

Houston Amendments

408.11.2 Tenant identification. Each occupied tenant space provided with a secondary exit to the exterior or exit corridor shall be provided with tenant identification by business name and/or address. Letters and numbers of durable materials, at least 2 inches (50 mm) in height, shall be posted and maintained on the corridor side of the door, be plainly legible and shall contrast with their background.

~~**Exception:** Tenant identification is not required for anchor stores.~~

408.11.3 Maintenance. Unoccupied tenant spaces shall be:

1. Kept free from the storage of any materials.
2. Separated from the remainder of the building by partitions of at least 0.5-inch-thick (12.7 mm) gypsum board or an approved equivalent to the underside of the ceiling of the adjoining tenant spaces.
3. Without doors or other access openings other than one door that shall be kept key locked in the closed position except during that time when opened for inspection.
4. Kept free from combustible waste and be broom-swept clean.
5. Provided with temporary signs on corridor doors identifying the vacant spaces.

CHAPTER 5
FIRE SERVICE FEATURES

501.2 Permits. A permit shall be required as set forth in Sections 105.6 ~~and 105.7~~.

SECTION 502
DEFINITIONS

KEY BOX/FIRE DEPOSITORY BOX. A secure, tamper proof device with a lock operable ~~only~~ by a fire department master key; and containing building entry keys and other keys that may be required for access in an emergency.

***NOTE: All other portions of Section 502 remain as set forth in the International Fire Code.**

503.2 Specifications. Fire apparatus access roads shall be installed and arranged in accordance with Sections 503.2.1 through 503.2.7 and Houston Fire Department LSB Standard No. 03, "Fire Department Access."

503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than ~~13~~ 14 feet ~~6 inches~~ (~~4115 m~~ 4267 mm).

Exceptions:

1. When approved by the code official, vertical clearance may be reduced, provided the reduction does not impair access by fire apparatus and approved signs are installed and maintained indicating the established vertical clearance.
2. When approved by the code official, existing access roads may have an unobstructed width of not less than 15 feet (4572 mm), when the reduction in width will not impair access by fire department equipment, or when, for access roads in existence on June 15, 1976, the designation of a greater width would necessitate structural changes to the building.

503.2.3 Surface. Fire apparatus access roads shall be designed and ~~maintained~~ constructed to support the imposed loads of 75,000 pounds (34,000 kg) fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

503.3 Marking. Where required by the code official, approved signs or other approved notices shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. Marking of fire apparatus access roads shall be in accordance with Section 503.3 and Houston Fire Department LSB Standard No. 03, "Fire Department Access." Signs or notices shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

503.3.1 Alteration, defacing of signs unlawful. A person commits an offense if the person intentionally alters, defaces, injures, knocks down, or removes, or attempts to alter, deface, injure, knock down, or remove, any sign required under the terms of this code.

503.4 Obstruction of fire apparatus access roads.

503.4.1 General. The required width of a fire apparatus access road~~s~~, private drive, private street, or private access easement utilized for fire apparatus access shall not be obstructed in any manner, including the parking of vehicles. The minimum required widths and clearances established in Section 503.2.1 shall be maintained at all times.

Exceptions:

1. Access control gates installed in accordance with Houston Fire Department LSB Standard No. 04, "Access Control Gates." See Section 105.6 for permits.
2. Parking shall not include a vehicle that has a licensed vehicle operator in constant attendance in the vehicle, provided that the licensed operator has the ability to immediately remove the vehicle in case of an emergency.

503.4.2 Entrances. Entrances to fire apparatus access roads, trails or other accessways that have been closed with gates and barriers in accordance with Section 503.5 and 503.6 shall not be obstructed by parked vehicles.

503.4.3 Removal of vehicles and obstructions. Vehicles parked and obstructions placed in violation of this code may be removed at the vehicle owner's expense by or at the direction of the chief, any peace officer or the property owner in accordance with applicable provisions of the *City Code* and state law.

503.4.4 Presumption of ownership. In any prosecution arising under this code that relates to the unlawful parking, standing, or stopping of a motor vehicle, it shall be presumed that the person who is the registered owner of the motor vehicle is the person who parked or stopped the vehicle at the date and time of the offense charged.

Houston Amendments

503.5 Required gates or barricades. The code official is authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other accessways, not including public streets, alleys or highways. Access control gates and barriers shall be installed and maintained in accordance with Houston Fire Department LSB Standard No. 04, "Access Control Gates." For required permits see Section 105.6.2.

504.1.1 Key box required. When required by the code official, security gates and barriers on access walkways shall be provided with a approved *"9-1-1"* key boxes to facilitate emergency access into the property or building where emergency access is not readily available because of property or building design or because of distances from approved access roadways or drives to the building entrance. Key boxes shall be installed in accordance with Houston Fire Department LSB Standard No. 05, "Key Boxes." See Section 105.6 for required permit.

504.3 Stairway access to roof. New buildings four or more stories in height, except those with a roof slope greater than four units vertical in 12 units horizontal (33.3-percent slope), shall be provided with a stairway to the roof. Such stairway shall be marked at street and floor levels with a sign indicating that the stairway continues to the roof. Where roofs are used for roof gardens or for other purposes, stairways shall be provided as required for such occupancy classification. See Appendix H for stairway identification sign requirements.

505.1 Address numbers. New and existing buildings and occupancies therein shall have approved address numbers posted in accordance with Article V of Chapter 10 of the *City Code*., ~~building numbers, or approved building identification placed in a position to be plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be Arabic numerals or alphabet letters. Numbers shall be a minimum of 4 inches (102 mm) high with a minimum stroke width of 0.5 inch (12.7 mm).~~

SECTION 506
KEY BOXES/FIRE DEPOSITORY BOXES

506.1 When required. Where access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the code official is authorized to require a key box or a fire depository box to be installed in an accessible location. The key box shall be of an approved type and shall contain keys to gain access as required by the code official. Key boxes shall be provided in accordance with Houston Fire Department LSB Standard No. 05, "Key Boxes."

Houston Amendments

506.1.1 Locks. An approved lock shall be installed on gates or similar barriers when required by the code official. Key boxes shall be provided in accordance with Houston Fire Department LSB Standard No. 05, "Key Boxes."

506.3 Fire depository box. A fire depository box shall be provided within all high-rise occupancies, as defined in the *Building Code*, or other facilities as may be required by the code official. Fire depository boxes shall be installed and maintained in accordance with Houston Fire Department LSB Standard No. 06, "Fire Depository Boxes."

506.4 Permit required. A permit is required to install and maintain a key box and/or fire depository box. See Section 105.6.

508.5.7 Removal of vehicles parked near fire hydrants. Vehicles parked within 15 feet of a fire hydrant in violation of a state law or ordinance may be removed at the vehicle owner's expense by or at the direction of the fire chief, code official or any peace officer in accordance with applicable provisions of the *City Code* and state law.

509.1 Features. ~~Where required by other sections of this code and in all buildings classified as high-rise buildings by the *International Building Code*, a fire command center for fire department operations shall be provided. The location and accessibility of the fire command center shall be approved by the fire department. The fire command center shall be separated from the remainder of the building by not less than a 1-hour fire-resistance-rated fire barrier. The room shall be a minimum of 96 square feet (9 m²) with a minimum dimension of 8 feet (2438 mm). A layout of the fire command center and all features required by this section to be contained therein shall be submitted for approval prior to installation. The fire command center shall comply with NFPA 72 and shall contain the following features:~~

~~1. The emergency voice/alarm communication system unit.~~

~~2. The fire department communications system.~~

~~3. Fire-detection and alarm system annunciator system.~~

~~4. Annunciator visually indicating the location of the elevators and whether they are operational.~~

~~5. Status indicators and controls for air-handling systems.~~

~~6. The fire-fighter's control panel required by Section 909.16 for smoke control systems installed in the building.~~

~~7. Controls for unlocking stairway doors simultaneously.~~

~~8. Sprinkler valve and water-flow detector display panels.~~

~~9. Emergency and standby power status indicators.~~

~~10. A telephone for fire department use with controlled access to the public telephone system.~~

~~11. Fire pump status indicators.~~

~~12. Schematic building plans indicating the typical floor plan and detailing the building core, means of egress, fire protection systems, fire-fighting equipment and fire department access.~~

~~13. Work table.~~

~~14. Generator supervision devices, manual start and transfer features.~~

~~15. Public address system, where specifically required by other sections of this code.~~

Fire command centers for fire department operation shall be provided where required by and in accordance with the *Building Code*.

510.1.1 Identification of fire department connections. In addition to signs required by Section 912.4, all fire department connections to standpipe, sprinkler, or combined sprinkler/standpipe systems shall have approved signs indicating the nature of the systems and buildings served. Where a fire department connection for automatic sprinkler or standpipe systems services only a portion of a building or a specific building within a complex, an approved sign shall be posted, indicating the portion of the building or specific building being served. In buildings or other structures where pressure reducing devices or pressure reducing valves are installed on the standpipe system, the sign shall also indicate the locations or levels of the devices or valves and required pressure at the fire department connections. The signs shall be located on or adjacent to the connection and shall be constructed of durable material. The lettering shall be not less than 1 inch (25 mm) in height on a background of contrasting color so that the lettering is clearly visible.

510.1.2 Identification of control valves. When a fire extinguishing system is provided with more than one control valve, approved identification signs indicating the portion of the system controlled by each valve shall be provided.

CHAPTER 6
BUILDING SERVICES AND SYSTEMS

601.2 Permits. Permits shall be obtained for ~~refrigeration systems and~~ stationary lead acid battery systems as set forth in Section 105.6.

603.9 Gas meters and piping.

603.9.1 Protection of meters and piping. Above-ground gas meters, regulators and piping subject to damage shall be protected by a barrier complying with Section 312 or otherwise protected in an approved manner.

603.9.2 Testing of piping and systems.

603.9.2.1 Routine testing. All gas piping systems in Groups A, E, I, R-1 and R-2 occupancies shall be tested at least every five years by a licensed plumber. Systems shall be tested in accordance with the *Plumbing Code*. A written record shall be maintained and shall be made available to the code official upon request.

603.9.2.2 Testing for leaks. The code official is authorized to require a test of the gas piping system in any building or structure, of any occupancy type, when there is reason to believe a leak may exist in the system.

603.9.3 Automatic excess flow gas shut-off devices. Automatic excess flow gas shut-off devices shall be installed on fuel gas service lines for new Residential, Assembly, Institutional and Educational occupancies. The devices shall be installed on gas service lines downstream of the fuel gas utility meter in new construction and certain remodeling and when gas appliances are replaced or newly installed.

Automatic gas shut-off devices installed shall comply with the following requirements:

1. Be installed by a contractor licensed in the appropriate classification by the jurisdiction, the State of Texas and in accordance with the manufacturer's instructions.
2. Be listed and approved by one of the following listing and testing agencies: Independent Laboratory of the International Approval Services (IAS), Underwriter's Laboratory (UL), International Association of Plumbing and Mechanical Officials (IAPMO), Canadian Standards Association (CSA), American Gas Association (AGA), or other recognized listing and testing agency.
3. Where Automatic Gas Shut-Off Devices are installed as required by this section, they shall be maintained for the life of the building or structure or be replaced with a valve or device complying with the requirements of this section.

4. Shall be installed and approved under such permits as may be required by the construction code or building official.

604.3.1 Schedule. Inspection, testing and maintenance of emergency and standby power systems shall be in accordance with an approved schedule established upon completion and approval of the system installation and Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

605.3.1 Labeling. Doors into electrical control panel rooms shall be marked with a plainly visible and legible sign stating ELECTRICAL ROOM or similar approved wording. The disconnecting means for each service, feeder or branch circuit originating on a switchboard, ~~or~~ panelboard or throw-switch disconnect device shall be legibly and durably marked to indicate, the room, area or specific equipment it services or its purpose unless such purpose is clearly evident. Emergency shut-off or shut-down buttons or switches, regardless of color, located in or near a hazardous process area, equipment room, air handler space, computer area, medical equipment space, or any similar area, shall be plainly visible and legibly marked to indicate the function of each button or switch unless the purpose is clearly evident.

605.10 Protection of lighting fixtures and devices. All permanent or temporary lighting fixtures and devices used in mechanical spaces, service areas, exit accessways, stairways, and parking garages shall be provided with an approved protective device designed to prevent accidental breakage, contact with readily ignitable materials, or creation of electrical shock hazard.

Exceptions:

1. Listed devices approved for use in hazardous locations in accordance with the *Electrical Code*.
2. Listed incandescent bulbs or fluorescent tubes provided with approved shatter- or break-resistive protective coatings.
3. Listed devices for exterior use, with approved weather resistant bulbs.
4. Fixtures so located as to be suitably protected from accidental damage or breakage.

[M] 606.1 Scope. Refrigeration unit and system~~s~~ installations shall be ~~installed~~ in accordance with the ~~*International*~~ *Mechanical Code* under which they were installed.

Exceptions:

1. The code official is authorized to exempt temporary or portable installations.

2. Water and brine systems.

[M] 606.4 Change in refrigerant type. A change in the type of refrigerant in a refrigeration system shall be in accordance with the ~~*International*~~ *Mechanical Code*. Refrigerant types shall not be changed without prior notification and approval of the building official and the code official.

606.5 Access. Refrigeration systems ~~having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant~~ shall be accessible to the fire department at all times as required by the code official.

606.6.1 Periodic testing. The following emergency devices or systems shall be periodically tested in accordance with the manufacturer's instructions and as required by the code official.

1. Treatment and flaring systems.
2. Valves and appurtenances necessary to the operation of emergency refrigeration control boxes.
3. Fans and associated equipment intended to operate emergency ventilation systems.
4. Detection and alarm systems. Detection and alarm systems shall be installed and maintained as required for fire alarm systems in accordance with Chapter 9 and NFPA 72.

606.8 Refrigerant detector. Machinery rooms shall contain a refrigerant detector with an audible and visual alarm. The detector, or a sampling tube that draws air to the detector, shall be located in an area where refrigerant from a leak will concentrate. The alarm shall be actuated at a value not greater than the corresponding TLV-TWA values shown in the ~~*International*~~ *Mechanical Code* for the refrigerant classification. Detectors and alarms shall be placed in approved locations.

Exception: Detectors are not required for ammonia systems where the machinery room complies with ~~Section 1106.8 of the *International* *Mechanical Code*~~.

606.9 Remote controls. Remote control of the mechanical equipment and appliances located in the machinery room shall be provided ~~at an approved location immediately outside the machinery room and adjacent to its principal entrance~~ in accordance with the *Mechanical Code*.

606.9.1 Reserved. ~~**Refrigeration system.** A clearly identified switch of the break-glass type shall provide off-only control of electrically energized equipment and appliances in the machinery room, other than refrigerant leak detectors and machinery room ventilation~~.

606.9.2 Reserved. ~~Ventilation system.~~ ~~A clearly identified switch of the break-glass type shall provide on-only control of the machinery room ventilation fans.~~

606.10 Storage, use and handling. Flammable and combustible materials shall not be stored in machinery rooms for refrigeration systems ~~having a refrigerant circuit containing more than 220 pounds (100 kg) of Group A1 or 30 pounds (14 kg) of any other group refrigerant~~. Storage, use or handling of extra refrigerant or refrigerant oils shall be as required by Chapters 27, 30, 32 and 34.

Exceptions:

1. This provision shall not apply to spare parts, tools, and incidental materials necessary for the safe and proper operation and maintenance of the system.
2. Storage of excess A1 and B1 refrigerants up to an amount equal to the sum of all systems in the room will be permitted. Storage vessels shall be original DOTn containers or pressure vessels stamped in accordance with Section 8 of ASME 98.

606.10.1 Refrigerant removal. When refrigerant is removed or withdrawn from a refrigeration system, it shall be discharged into and stored in an approved container.

606.10.2 Use of portable refrigerant container. Portable refrigerant containers shall not be connected to a refrigerant system for a period longer than necessary to charge or discharge the refrigerant system.

606.10.3 Disposal of refrigerants. Disposal of refrigerants shall be in accordance with this code and all other applicable local, state and federal regulations and requirements for the type of refrigerants being disposed of.

606.11.2 Toxic and highly toxic refrigerants. Systems containing toxic or highly toxic refrigerants shall discharge vapor to the atmosphere only through an approved treatment system in accordance with Section 606.11.4 or a flaring system in accordance with Section 606.11.5.

Exception: Refrigerant R-123.

606.11.3 Ammonia refrigerant discharge. Systems containing ammonia refrigerant shall discharge ~~vapor to the atmosphere through a flaring system in accordance with Section 606.11.5, through an approved ammonia diffusion system in accordance with Section 606.11.6, or by other approved means~~ in accordance with the *Mechanical Code*.

~~**Exception:** Ammonia/water absorption systems containing less than 22 pounds (10 kg) of ammonia and for which the ammonia circuit is located entirely outdoors.~~

606.11.6 Reserved. ~~**Ammonia diffusion systems.** Ammonia diffusion systems shall include a tank containing 1 gallon of water for each pound of ammonia (4 l of water for each 1 kg of ammonia) that will be released in 1 hour from the largest relief device connected to the discharge pipe. The water shall be prevented from freezing. The discharge pipe from the pressure relief device shall distribute ammonia in the bottom of the tank, but no lower than 33 feet (10 058 mm) below the maximum liquid level. The tank shall contain the volume of water and ammonia without overflowing.~~

606.12 Discharge location for refrigeration machinery room ventilation. Exhaust from mechanical ventilation systems serving refrigeration machinery rooms ~~capable of exceeding 25 percent of the LFL or 50 percent of the IDLH shall be equipped with approved treatment systems to reduce the discharge concentrations of flammable, toxic or highly toxic refrigerants to those values or lower~~ shall be in accordance with the *Mechanical Code*.

[B] 607.2 Emergency signs at elevator landings. An approved pictorial sign ~~of a standardized design~~ shall be posted so as to be visible from ~~adjacent~~ to each elevator call button station on all floors, other than the main ground level discharge lobby, instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN CASE OF FIRE ~~EMERGENCY~~, DO NOT USE ELEVATOR. USE EXIT STAIRS UNLESS OTHERWISE INSTRUCTED. The lettering shall be at least ½ inch (13 mm) block letters on a background of a contrasting color so that the lettering is clearly visible and legible. The sign shall also contain a correctly oriented diagram showing location where posted and the location and identification of stairs on the floor. The top of the sign shall not be above 6 feet (1.8 m) from the floor level. ~~The emergency sign shall not be required for elevators that are part of an accessible means of egress complying with Section 1003.2.13.3.~~

608.1 Scope. Stationary lead-acid battery systems using vented (flooded) lead-acid batteries having an electrolyte capacity of more than 50 gallons (189 L) used for facility standby power, emergency power or uninterrupted power supplies shall comply with this section. Valve-regulated lead-acid batteries are not subject to the requirements of this section, but shall comply with Section 609.

SECTION 609
VALVE REGULATED LEAD ACID (VRLA) BATTERY SYSTEMS

609.1 Scope. Valve-regulated lead acid (VRLA) battery systems having an electrolyte capacity of more than 50 gallons (189 L) used for facility standby power, emergency power, or uninterrupted power supplies (UPS) shall comply with this section.

609.2 Safety vents. VRLA batteries shall be equipped with self-resealing flame-arresting safety vents.

609.3 Thermal runaway. VRLA battery systems shall be provided with a device listed in accordance with UL 1778 or equivalent, or other approved method, to preclude, detect, and control thermal runaway.

609.4 Neutralization. An approved manual method and materials for the neutralization of a release of electrolyte shall be provided. The method and materials shall be capable of controlling and neutralizing a release of 3% of the capacity of the largest VRLA cell or block in the room to a pH between 7.0 and 9.0.

609.5 Signs. Doors into electrical equipment rooms containing VRLA battery systems shall be provided with approved signs. The signs shall state that the room contains lead-acid battery systems and contains energized electrical circuits. Where VRLA batteries are contained in cabinets in occupied work centers, the cabinet enclosures shall be located within 10 feet of the equipment that they support. The cabinets shall have exterior labels that identify the manufacturer and model number of the system and electrical rating (voltage and current) of the contained battery system. Within the cabinet there shall be signs that indicate the relevant electrical, chemical, and fire hazards.

609.6 Smoke detection. An approved automatic smoke detection system shall be installed in rooms containing VRLA battery systems in accordance with Section 907.2

[M] SECTION ~~609~~ 610
COMMERCIAL KITCHEN HOODS

~~**609.1**~~ **610.1 General.** Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I and shall be designed to capture and confine cooking vapors and residues.

Exception: Factory-built commercial exhaust hoods which are tested in accordance with UL 710 shall comply with the ~~*International*~~ *Mechanical Code*.

~~**609.1.1**~~ **610.1.1 Design and installation.** The design and installation of commercial kitchen exhaust hoods shall be in accordance with the ~~*International*~~ *Mechanical Code*.

~~**609.2**~~ **610.2 Where required.** A Type I hood shall be installed at or above all commercial food heat-processing appliances that produce grease vapors or smoke.

Exceptions: Food heat-processing appliances installed within a dwelling unit.

~~**609.2.1**~~ **610.2.1 Type I hood.** A Type I hood shall be installed at or above all commercial food heat-processing appliances that produce grease vapors or smoke.

~~**609.2.2**~~ **610.2.2 Domestic cooking appliances used for commercial purposes.** Domestic cooking appliances utilized for commercial purposes shall be provided with Type I hoods as

required for the type of appliances and processes in accordance with Sections ~~609.2~~ 610.2 and ~~609.2.1~~ 610.2.1.

~~609.2.3~~ 610.2.3 Solid fuel. Type I hoods for use over solid fuel-burning cooking appliances shall discharge to an exhaust system that is independent of other exhaust systems.

~~609.3~~ 610.3 Capacity of hoods. Canopy-type commercial cooking hoods shall exhaust a minimum quantity of air (Q) determined in accordance with this section and Sections ~~609.3.1~~ 610.3.1 through ~~609.3.4~~ 610.3.4

where:

A = The horizontal surface area of the hood, in square feet (m^2).

D = Distance in feet (mm) between the lower lip of the hood and the cooking surface.

P = That part of the perimeter of the hood that is open, in feet (mm).

Q = Quantity of air, in cubic feet per minute (m^3/s).

~~609.3.1~~ 610.3.1 Solid fuel-burning cooking appliances. The minimum airflow for Type I hoods used for solid fuel-burning cooking appliances, grease-burning charbroilers and similar appliances shall be:

Number of exposed sides	Formula	For SI:
4 (island or central hood)	$Q = 300A$	$Q = 1.52A$
3 or less	$Q = 200A$	$Q = 1.02A$
Alternative formula	$Q = 100PD$	$Q = 0.51PD$

~~609.3.2~~ 610.3.2 High temperature. The minimum airflow for Type I hoods used for high-temperature appliances such as deep fat fryers shall be determined as follows:

Number of exposed sides	Formula	For SI:
4 (island or central hood)	$Q = 150A$	$Q = 0.76A$
3 or less	$Q = 100A$	$Q = 0.51A$
Alternative formula	$Q = 100PD$	$Q = 0.51PD$

~~609.3.3~~ 610.3.3 Medium temperature. The minimum airflow for Type I hoods used for medium-temperature appliances such as rotisseries, grills and ranges shall be determined as follows:

Number of exposed sides	Formula	For SI:
4 (island or central hood)	$Q = 100A$	$Q = 0.51A$
3 or less	$Q = 75A$	$Q = 0.38A$

Alternative formula	$Q = 50PD$	$Q = 0.25PD$

~~609.3.4~~ 610.3.4 Low temperature. The minimum airflow for Type I hoods used for low-temperature appliances such as medium- to low-temperature ranges, roasters, roasting ovens and pastry ovens shall be determined as follows:

Number of exposed sides	Formula	For SI:
4 (island or central hood)	$Q = 75A$	$Q = 0.38A$
3 or less	$Q = 50A$	$Q = 0.25A$
Alternative formula	$Q = 50PD$	$Q = 0.25PD$

~~609.4~~ 610.4 Capacity for noncanopy hoods. In addition to all other requirements for hoods specified in this section, the volume of air exhausting through a noncanopy-type hood to the duct system shall not be less than 300 cubic feet per minute (cfm) per linear foot [0.46 m³/(s A m)] of the cooking appliances.

~~609.5~~ 610.5 Exhaust outlets. Exhaust outlets located within the hood shall be located so as to optimize the capture of particulate matter. Each outlet shall serve not more than a 12-foot (3658 mm) section of hood.

~~609.6~~ 610.6 Performance test. A performance test shall be conducted upon completion and before final approval of the installation of a ventilation system serving commercial food heat-processing appliances. The test shall verify the rate of airflow and proper operation as specified in this chapter. The permit holder shall furnish the necessary test equipment and devices required to perform the tests.

~~609.7~~ 610.7 Makeup air. Makeup air shall be supplied during the operation of commercial kitchen exhaust systems that are provided for commercial food heat-processing appliances. The amount of makeup air supplied shall be approximately equal to the amount of exhaust air. The makeup air shall not reduce the effectiveness of the exhaust system. Makeup air shall be provided by gravity or mechanical means or both. For mechanical makeup air systems, the exhaust and makeup air systems shall be electrically interlocked to insure that makeup air is provided whenever the exhaust system is in operation.

Exception: This section shall not apply to dwelling units.

~~609.7.1~~ 610.7.1 Makeup air temperature. The temperature differential between the makeup air and the air in the conditioned space shall not exceed 10/F (6/C).

Exceptions:

1. Makeup air that is part of the air-conditioning system.
2. Makeup air that does not decrease the comfort conditions of the occupied space.

CHAPTER 7
FIRE-RESISTANCE-RATED CONSTRUCTION

703.4 Testing. Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to confirm proper operation and full closure. Fire doors shall be inspected and tested in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment." Documentation of test results, repairs made and ~~A~~ a written record of inspections shall be maintained and be available to the code official.

703.5 Fire dampers. Fire dampers shall be installed in accordance with manufacturers guidelines and the *Building Code* and shall be accessible for inspection and servicing.

703.5.1 Testing. Fire dampers shall be inspected and tested in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment." Documentation of test results, repairs made and a written record of inspections shall be maintained and be available to the code official.

CHAPTER 8

INTERIOR FINISH, DECORATIVE MATERIALS AND FURNISHINGS

803.3.2 Artwork. Artwork and teaching materials shall be limited on the walls of corridors to not more than 20 percent of the wall area.

Exception: The code official may allow this amount to be exceeded in buildings that are protected throughout by an automatic sprinkler system.

803.4.2 Artwork. Artwork and teaching materials shall be limited on walls of corridors to not more than 20 percent of the wall area.

Exception: The code official may allow this amount to be exceeded in buildings that are protected throughout by an automatic sprinkler system.

CHAPTER 9
FIRE PROTECTION SYSTEMS

901.1 Scope. The provisions of this chapter and the *Building Code* shall specify where fire protection systems are required and shall apply to the design, installation, inspection, operation, testing and maintenance of all fire protection systems.

901.2 Construction documents. The code official shall have the authority to require construction documents and calculations ~~for all fire protection systems and to require permits be issued~~ for the installation, rehabilitation or modification of any fire protection system. Construction documents for fire protection systems shall be submitted for review and approval in accordance with the *Building Code* prior to system installation.

~~901.2.1 Statement of compliance.~~ ~~Before requesting final approval of the installation, where required by the code official, the installing contractor shall furnish a written statement to the code official that the subject fire protection system has been installed in accordance with approved plans and has been tested in accordance with the manufacturer's specifications and the appropriate installation standard. Any deviations from the design standards shall be noted and copies of the approvals for such deviations shall be attached to the written statement.~~

901.4.4 Appearance of equipment. Any device that has the physical appearance of life safety or fire protection equipment but which does not perform that life safety or fire protection function, shall be prohibited. Systems or devices that are permanently out of service or any non-required life safety system or fire protection system that no longer functions as originally installed shall be removed or the appearance changed so as not to be mistaken for functioning life safety or fire protection equipment.

901.5 Installation acceptance testing. Fire detection and alarm systems, fire-extinguishing systems, fire hydrant systems, fire standpipe systems, fire pump systems, private fire service main and all other fire protection systems and appurtenances thereto shall be subject to acceptance tests as contained in the installation standards and as approved by the code official. ~~The code official shall be notified before any required acceptance testing.~~

901.5.1 Occupancy. It shall be unlawful to occupy any portion of a building or structure until the required fire detection, alarm and suppression systems have been tested and approved.

Exception: See Section 105.3.3.

901.6.1 Standards. Fire protection systems shall be inspected, tested and maintained in accordance with the referenced standards listed in Table 901.6.1 and in accordance with Houston

Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment" and LSB Standard No. 01, "Installation and Maintenance of Portable Fire Extinguishers."

901.6.2 Records. Records of all system inspections, tests, and maintenance required by the referenced standards in Table 901.6.1, and of all major repairs to the life safety and fire protection equipment systems, shall be maintained on the premises for ~~a minimum of 1 year~~ not less than 3 years and made available to the code official upon request.

Exception: Where inspection or testing may be on a 4- or 5- year cycle, the records shall be maintained until the next testing cycle has been completed.

901.6.3 Systems in high-rise buildings. The owner of a high-rise building shall be responsible for assuring that the life safety and fire systems required by the *Building Code* are maintained in an operable condition at all times. Life safety and fire protection equipment shall be tested and inspected in accordance with Section 901.6.1.

901.7 Systems out of service. Where a required life safety or fire protection system is out of service, the fire department and the code official shall be notified immediately in accordance with Section 901.9 and, where required by the code official, the building shall either be evacuated or an approved fire watch or standby inspector, in accordance with Section 112, shall be provided for all occupants left unprotected by the shut down until the life safety or fire protection system has been returned to service.

Where utilized, fire watches shall be provided with at least one approved means for notification of the fire department and their only duty shall be to perform constant patrols of the protected premises and keep watch for fires.

901.7.2 Tag required. A 'red' tag shall be used to indicate that a system, or portion thereof, has been removed from service. The 'red' tag shall indicate the nature of the problem, the date, time and location, and the name of the person or service company applying the tag.

901.9 Notification of fire department. The Houston Fire Department Office of Emergency Communications shall be immediately notified by telephone, at (713) 222-7643, whenever the required fire protection or life safety system is placed out of service for emergency or non-scheduled repairs, replacements, or service. The Fire Department shall be provided with the following information:

1. Correct street address and name of the building or structure.
2. The caller's name and contact phone number.
3. The identity of system that is impaired or shut down, and if known, the nature of impairment or failure.

4. Estimated length of time system is to be out of service for repairs.

The Fire Department Office of Emergency Communications shall again be notified when the system is restored to normal operational status.

SECTION 902
DEFINITIONS

STANDPIPE, TYPES OF. Standpipe types are as follows:

~~**Automatic dry.** A dry standpipe system, normally filled with pressurized air, that is arranged through the use of a device, such as a dry pipe valve, to admit water into the system piping automatically upon the opening of a hose valve. The water supply for an automatic dry standpipe system shall be capable of supplying the system demand.~~

Automatic wet. A wet standpipe system that has a water supply that is capable of supplying the system demand automatically.

~~**Manual dry.** A dry standpipe system that does not have a permanent water supply attached to the system. Manual dry standpipe systems require water from a fire department pumper to be pumped into the system through the fire department connection in order to supply the system demand.~~

Manual wet. A wet standpipe system connected to a water supply for the purpose of maintaining water within the system but which does not have a water supply capable of delivering the system demand attached to the system. Manual wet standpipe systems require water from a fire department pumper (or the like) to be pumped into the system in order to supply the system demand.

~~**Semiautomatic dry.** A dry standpipe system that is arranged through the use of a device, such as a deluge valve, to admit water into the system piping upon activation of a remote control device located at a hose connection. A remote control activation device shall be provided at each hose connection. The water supply for a semiautomatic dry standpipe system shall be capable of supplying the system demand.~~

***NOTE: All other portions of Section 902 remain as set forth in the International Fire Code.**

903.2.1.1 Group A-1. An automatic sprinkler system shall be provided ~~throughout a fire area containing a~~ for Group A-1 ~~occupancy~~ occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.
4. The fire area contains a multi-theater complex.

903.2.1.2 Group A-2. An automatic sprinkler system shall be provided ~~throughout a fire area containing a~~ for Group A-2 ~~occupancy~~ occupancies where one of the following conditions exists:

1. The fire area exceeds 5,000 square feet (465 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided ~~throughout a fire area containing a~~ for Group A-3 ~~occupancy~~ occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sports areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

903.2.1.4 Group A-4. An automatic sprinkler system shall be provided ~~throughout a fire area containing a~~ for Group A-4 ~~occupancy~~ occupancies where one of the following conditions exists:

1. The fire area exceeds 12,000 square feet (1115 m²).
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than the level of exit discharge.

Exception: Areas used exclusively as participant sport areas where the main floor area is located at the same level as the level of exit discharge of the main entrance and exit.

903.2.3 Group F-1. An automatic sprinkler system shall be provided throughout all buildings ~~where the fire area~~ containing a Group F-1 occupancy where one of the following conditions exists:

1. Where a Group F-1 fire area occupancy exceeds 12,000 square feet (1115 m²), or

2. Where a Group F-1 fire area is located more than three stories ~~in height~~ above grade, or

3. Where the combined ~~fire~~ area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

903.2.6 Group M. An automatic sprinkler system shall be provided throughout buildings ~~where the fire area~~ containing a Group M occupancy where one of the following conditions exists:

1. Where a Group M fire area exceeds 12,000 square feet (1115 m²), or

2. Where a Group M fire area is located more than three stories ~~in height~~ above grade, or

3. Where the combined ~~fire~~ area of all Group M fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

903.2.7 Group R-1. An automatic sprinkler system shall be provided throughout buildings ~~with~~ containing a Group R-1 fire area where the building is three or more stories in height or contain 20 or more sleeping units.

Exceptions:

1. ~~Where guestrooms are not more than three stories above the lowest level of exit discharge and each guestroom has at least one door leading directly to an exterior exit access that leads directly to approved exits.~~

2. A residential sprinkler system installed in accordance with Section 903.3.1.2 shall be allowed in buildings, or portions thereof, of Group R-1.

903.2.10 Group S-1. An automatic sprinkler system shall be provided throughout all buildings ~~where the fire area~~ containing a Group S-1 occupancy where one of the following conditions exists:

1. Where a Group S-1 fire area exceeds 12,000 square feet (1115 m²), or

2. Where a Group S-1 fire area is located more than three stories ~~in height~~ above grade, or

3. Where the combined ~~fire~~ area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds 24,000 square feet (2230 m²).

903.2.10.1 Repair garages. An automatic sprinkler system shall be provided throughout all buildings used as repair garages in accordance with the ~~*International*~~ *Building Code*, as follows:

1. Buildings two or more stories in height, including basements, with a fire area containing a repair garage exceeding 10,000 square feet (929 m²).
2. One-story buildings with a fire area containing a repair garage exceeding 12,000 square feet (1115 m²).
3. Buildings with a repair garage servicing vehicles parked in the basement.

903.2.13 Reserved. ~~During construction.~~ ~~Automatic sprinkler systems required during construction, alteration and demolition operations shall be provided in accordance with Section 1413.~~

903.3.2 Quick-response and residential sprinklers. Where automatic sprinkler systems are required by this code, quick-response or residential automatic sprinklers shall be installed in the following areas in accordance with Section 903.3.1 and their listings:

1. Throughout all spaces within a smoke compartment containing patient sleeping rooms in Group I-2 in accordance with the ~~*International*~~ *Building Code*.
2. Dwelling units~~, guestrooms~~ and sleeping units ~~rooms~~ in Group R and I-1 occupancies.
3. Light-hazard occupancies as defined in NFPA 13.

903.3.6 Hose threads. Fire hose threads used in connection with automatic sprinkler systems shall ~~comply with NFPA 1963 or as otherwise~~ be approved, and shall be compatible with fire department hose threads.

904.11 Commercial cooking systems. The automatic fire extinguishing system for commercial cooking systems shall be of a type recognized for protection of commercial cooking equipment and exhaust systems of the type and arrangement protected. Pre-engineered automatic dry- and wet-chemical extinguishing systems shall be tested in accordance with UL 300 and listed and labeled for the intended application. Other types of automatic fire-extinguishing systems shall be listed and labeled for specific use as protection for commercial cooking operations. The system shall be installed in accordance with this code, its listing and the manufacturer's installation instructions. Automatic fire-extinguishing systems of the following types shall be installed in accordance with NFPA 96 and the referenced standard indicated, as follows:

1. Carbon dioxide extinguishing systems, NFPA 12.
2. Automatic sprinkler system, NFPA 13.
3. Foam-water sprinkler system or foam-water spray systems, NFPA 16.

4. Dry-chemical extinguishing systems, NFPA 17.
5. Wet-chemical extinguishing systems, NFPA 17A.

Exception: Commercial cooking equipment recirculating systems that are tested in accordance with UL 197, listed, labeled and installed in accordance with the *Mechanical Code*.

904.11.2 System interconnection. The actuation of the fire suppression system shall automatically shut down the fuel or electrical power supply to all ~~the~~ cooking equipment and electrical receptacles and devices that are located under the hood. The fuel and electrical supply reset shall be manual.

904.11.6.4 Extinguishing system service. Automatic fire-extinguishing systems shall be serviced and tagged at least every 6 months and after activation of the system. Inspection shall be by qualified individuals, and a record of the service and inspection maintained on premises and made available ~~certificate of inspection shall be forwarded~~ to the code official upon ~~completion~~ request. See Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

905.1 General. Standpipe systems shall be provided in new buildings and structures in accordance with this section. Fire hose threads used in connection with standpipe systems shall ~~comply with NFPA 1963 or as otherwise~~ be approved and shall be compatible with fire department hose threads. The location of fire department hose connections shall be approved. In buildings used for high-piled combustible storage, fire protection shall be in accordance with Chapter 23.

905.3.1 Building height. Class III standpipe systems shall be installed throughout buildings where the floor level of the highest story is located more than 30 feet (9144 mm) above ~~the lowest level of the fire department vehicle access~~ grade, or where the floor level of the lowest story is located more than 30 feet (9144 mm) below ~~the highest level of fire department vehicle access~~ grade.

Exceptions:

1. Class I standpipes are allowed in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
2. ~~Class I manual standpipes are allowed in open parking garages where the highest floor is located not more than 150 feet (45 720 mm) above the lowest level of fire department vehicle access.~~

3. Class I manual dry standpipes are allowed in open parking garages that are subject to freezing temperatures, provided that the hose connections are located as required for Class II standpipes in accordance with Section 905.5.

4. Class I standpipes are allowed in basements equipped throughout with an automatic sprinkler system.

905.3.2 Reserved. Building area. In buildings exceeding 10,000 square feet (929 m²) in area per story, Class I automatic wet or manual wet standpipes shall be provided where any portion of the building's interior area is more than 200 feet (60 960 mm) of travel, vertically and horizontally, from the nearest point of fire department vehicle access.

Exceptions:

1. Buildings equipped throughout with automatic sprinkler systems installed in accordance with Section 903.3.1.1.

2. Group A-4, A-5, F-2, R-2, S-2 or U occupancies.

3. Automatic dry and semiautomatic dry standpipes are allowed as provided for in NFPA 14.

905.3.3 Group A. Class I automatic wet standpipes shall be provided in nonsprinklered Group A buildings having an occupant load exceeding 1,000 persons.

Exceptions:

1. Open-air-seating spaces without enclosed spaces.

2. Class I automatic dry and semiautomatic dry standpipes or manual wet standpipes are allowed in buildings where the highest floor surface used for human occupancy is 75 feet (22 860 mm) or less above the lowest level of fire department vehicle access.

905.3.4 Covered mall buildings. Covered mall buildings and buildings connected thereto shall be equipped throughout with a Class I automatic wet standpipe system where required by Section 905.3. Covered mall buildings that are not required to be equipped with a standpipe system by Section 905.3 shall be equipped with Class I hose connections connected to a system sized to deliver 250 gallons per minute (946 L/min) at the most hydraulically remote outlet. Hose connections shall be provided at each of the following locations:

1. Within the mall at the entrance to each exit passageway or exit.

2. At each floor-level landing within enclosed stairways opening directly to the mall.

3. At exterior public entrances to the mall.

905.3.5 Stages. Stages greater than 1,000 square feet in area (93 m²) shall be equipped with a Class III II wet standpipe system with 1.5-inch and 2.5-inch (38 mm and 64 mm) hose connections on each side of the stage.

Exception: Where the building or area is equipped throughout with an automatic sprinkler system, the hose connections are allowed to be supplied from the automatic sprinkler system ~~and shall have a flow rate of not less than that required by NFPA 14 for Class III standpipes~~.

905.3.6 Underground buildings. Underground buildings shall be equipped throughout with a Class I automatic wet ~~or manual wet~~ standpipe system.

905.4 Location of Class I standpipe hose connections. Class I standpipe hose connections shall be provided in all of the following locations:

1. In every required stairway, a hose connection shall be provided for each floor level above or below grade. Hose connections shall be located at ~~an intermediate~~ each floor level landing ~~between floors~~, unless otherwise approved by the code official.
2. On each side of the wall adjacent to the exit opening of a horizontal exit.
3. In every exit passageway at the entrance from the exit passageway to other areas of a building.
4. In covered mall buildings, adjacent to each exterior public entrance to the mall and adjacent to each entrance from an exit passageway or exit corridor to the mall.
5. Where the roof has a slope less than four units vertical in 12 units horizontal (33.3-percent slope), each standpipe shall be provided with a hose connection located either on the roof or at the highest landing of stairways with stair access to the roof. An additional hose connection shall be provided at the top of the most hydraulically remote standpipe for testing purposes.
6. Where the most remote portion of a nonsprinklered floor or story is more than 150 feet (45 720 mm) from a hose connection or the most remote portion of a sprinklered floor or story is more than 200 feet (60 960 mm) from a hose connection, the code official is authorized to require that additional hose connections be provided in approved locations.

905.5 Location of Class II standpipe hose connections. Class II standpipe hose connections shall be accessible and shall be located so that all portions of the building are within 30 feet (9144 mm) of a variable nozzle attached to 100 feet (30 480 mm) of hose.

905.8 ~~Dry standpipe.~~ ~~In buildings requiring standpipes, dry standpipes complying with NFPA 14 are permitted when, in the opinion of the code official, an approved water supply is not available or when the standpipe is subject to freezing.~~ **Design pressure.** Design pressure at the uppermost valve for a Class II standpipe system shall be 35 psig (241 kPa).

Houston Amendments

906.2 General requirements. Fire extinguishers shall be selected, installed and maintained in accordance with this section, ~~and~~ NFPA 10, and Houston Fire Department LSB Standard No. 01, "Installation and Maintenance of Portable Fire Extinguishers."

Exception: The travel distance to reach an extinguisher shall not apply to the spectator seating portions of Group A- 5 occupancies.

907.1.3 State smoke alarm requirements for dwellings. Installation, inspection, and repair of smoke alarms in certain dwellings is governed by Subchapter F of Chapter 92 of the Texas Property Code. No provision of this section or other provision of this Code shall be deemed to excuse compliance with the subject state law, and to the extent of any inconsistency, the state law shall control.

907.2.3 Group E. A manual and automatic fire alarm system shall be installed in Group E occupancies. ~~When~~ If an automatic sprinkler system~~s or smoke detectors are~~ is installed, such system~~s or detectors~~ shall be connected to the building fire alarm system. Smoke detectors, connected to the fire alarm system, shall be installed in each interior corridor serving as an exit and in storerooms, mechanical rooms, janitorial rooms and similar areas. Smoke detectors shall not be required in toilet rooms, class rooms or offices.

Exceptions:

1. ~~Group E occupancies with an occupant load of less than 50.~~
2. Manual fire alarm boxes are not required in Group E occupancies where the building is protected throughout by an approved supervised automatic sprinkler system having a local alarm to notify occupants. ~~all the following apply:~~
   - ~~2.1. Interior corridors are protected by smoke detectors with alarm verification.~~
   - ~~2.2. Auditoriums, cafeterias, gymnasiums and the like are protected by heat detectors or other approved detection devices.~~
   - ~~2.3. Shops and laboratories involving dusts or vapors are protected by heat detectors or other approved detection devices.~~
   - ~~2.4. Off-premises monitoring is provided.~~
   - ~~2.5. The capability to activate the evacuation signal from a central point is provided.~~
   - ~~2.6. In buildings where normally occupied spaces are provided with a two-way communication system between such spaces and a constantly attended receiving station from where a general evacuation alarm can be sounded, except in locations specifically designated by the code official.~~

2. Where required in a Group E Occupancy, manual fire alarm boxes shall be located in accordance with Section 907.4.

3. Approved heat detectors may be installed in lieu of smoke detectors in mechanical rooms, janitorial rooms and similar areas.

907.2.3.1 Group E childcare facilities with an occupant load of 50 or more. Smoke detectors shall be provided in corridors, in common areas, and in each room that exceeds 20 square feet in floor area.

Exception: Approved heat detectors may be installed in lieu of smoke detectors in mechanical rooms, janitorial rooms and similar areas.

907.2.3.2 Group E childcare facilities with an occupant load of less than 50. Smoke detectors shall be provided in each occupiable area. Each of the detectors shall be interconnected so that activation of any detector shall automatically activate the alarm of all detectors, unless provided with a fire alarm system in accordance with Section 907.2.3.1.

~~**907.2.6.1 Group I-2.** Corridors in nursing homes (both intermediate care and skilled nursing facilities), detoxification facilities and spaces open to the corridors shall be equipped with an automatic fire detection system.~~

~~**Exceptions:**~~

~~1. Corridor smoke detection is not required where patient sleeping rooms are provided with smoke detectors that compy with UL 268. Such detectors shall provide a visual display on the corridor side of each patient room and shall provide an audible and visual alarm at the nursing station attending each room.~~

~~2. Corridor smoke detection is not required where patient room doors are equipped with automatic door-closing devices with integral smoke detectors on the room sides installed in accordance with their listing, provided that the integral detectors perform the required alerting function.~~

Patient rooms. Patient rooms within Group I-1 and I-2 occupancies shall be provided with UL 268-type smoke detectors. The detectors shall provide a visual display on the corridor side of each patient sleeping room and shall provide an audible and visual alarm at the nursing station attending each sleeping unit. In patient sleeping rooms equipped with automatic door closures having integral smoke detectors on the room side, the integral detector may be substituted for the room smoke detector, provided that it performs the required alerting functions.

907.2.6.2.3 Smoke detectors. An approved automatic smoke detection system shall be installed throughout resident housing areas, including sleeping areas and contiguous day rooms, group activity spaces and other common spaces normally accessible to residents.

Exceptions:

~~1. Other approved smoke detection arrangements providing equivalent protection including, but not limited to, placing detectors in exhaust ducts from cells or behind protective guards listed for the purpose are allowed when necessary to prevent damage or tampering.~~

~~2. Sleeping rooms in Use Conditions II and III.~~

~~3. Smoke detectors are not required in sleeping rooms with four or fewer occupants in smoke compartments that are equipped throughout with an approved automatic sprinkler system.~~

907.2.7 Group M. A manual fire alarm system shall be installed in Group M occupancies, other than covered mall buildings complying with Section 402 of the *Building Code*, having an occupant load of 500 or more persons or more than 100 persons above or below the lowest level of exit discharge.

Exception: Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system and the alarm notification appliances will activate upon sprinkler water flow.

907.2.8 Group R-1. A manual fire alarm system and an automatic fire detection system shall be installed in Group R-1 occupancies.

Exceptions:

1. A manual fire alarm system is not required in buildings not over two stories in height where all individual ~~guestrooms~~ sleeping units and contiguous attic and crawl spaces are separated from each other and public or common areas by at least 1-hour fire partitions and each individual ~~guestroom~~ sleeping units has an exit directly to a public way, exit court or yard.
2. An automatic fire detection system is not required in buildings that do not have interior corridors serving ~~guestrooms~~ sleeping units and where ~~guestrooms~~ sleeping units have a means of egress door opening directly to an exterior exit access that leads directly to the exits.
3. A separate fire alarm system is not required in buildings that are equipped throughout with an approved supervised automatic sprinkler system and which have a local fire alarm that meets the notification requirements of Section 907.10.2.

907.2.8.1 Fire detection system. System smoke detectors are not required in ~~guestrooms~~ sleeping units provided that the single-station smoke alarms required by Section 907.2.10 are connected to the emergency electrical system and are annunciated by ~~guestroom~~ sleeping units at a constantly attended location from which the fire alarm system is capable of being manually activated.

907.2.8.2 Manual fire alarm boxes. Manual fire alarm boxes are not required for interior corridors having smoke detectors as specified in Section 907.2.8.3.

907.2.8.3 Smoke detectors. Smoke detectors shall be provided in all common areas and interior corridors serving as a required means of egress for an occupant load of 10 or more.

907.2.8.4 Heat detectors. Heat detectors shall be provided in common areas such as recreational rooms, laundry rooms, furnace rooms, and similar areas.

907.2.8.5 Visual signaling devices. Sleeping units for persons with hearing impairments shall be provided with visible and audible alarm-indicating appliances, activated by both the in-room smoke detector and the fire alarm system as specified in Section 907.10.1.2.

907.2.10.1.1 Group R-1. Single- or multiple-station smoke alarms shall be installed in all of the following locations in Group R-1:

1. In sleeping areas.
2. In every room in the path of the means of egress from the sleeping area to the door leading from the ~~guestroom~~ sleeping unit or suite.
3. In each story within the ~~guestroom~~ sleeping unit or suite, including basements. For ~~guestroom~~ sleeping unit or suites with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

907.2.10.2 Power source. In new construction, required smoke alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Wiring shall be permanent and without a disconnecting switch other than as required for over current protection.

Exceptions:

1. Smoke alarms are not required to be equipped with battery backup in Group R-1 where they are connected to an emergency electrical system.

2. Smoke alarms are allowed to be solely battery operated in existing buildings, buildings not served from a commercial power source and in existing areas where alterations or repairs regulated by Section 907.2.10.1.4 do not result in the removal of interior wall or ceiling finishes exposing the structure. ~~; unless there is an attic, crawl space or basement available which could provide access for building wiring without the removal of interior finishes.~~

907.2.10.3 Interconnection. Where more than one smoke alarm is required to be installed within an individual dwelling unit in Group R-2, R-3 or R-4, or within an individual ~~guestroom~~ sleeping unit or suite in Group R-1, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

Exceptions:

1. Smoke alarms that are permitted to be solely battery operated in accordance with Section 907.2.10.2 are not required to be interconnected.
2. Smoke alarms in existing areas are not required to be interconnected where alterations or repairs regulated by Section 907.2.10.1.4 do not result in the removal of interior wall or ceiling finishes exposing the structure~~, unless there is an attic, crawl space or basement available which could provide access for interconnection without the removal of interior finishes~~.

907.2.11.3 Emergency voice/alarm communication system. An emergency voice/alarm communication system, which is also allowed to serve as a public address system, shall be installed in accordance with NFPA 72 and be audible throughout the entire special amusement building. The installed address system may also serve as an alarm.

Exception: In buildings that are not provided with an approved automatic sprinkler system, the public address system is not permitted to serve as the alarm communication system.

907.2.12.1 Automatic fire detection. Smoke detectors shall be provided in accordance with this section. Smoke detectors shall be connected to an automatic fire alarm system in accordance with NFPA 72-1996. The activation of any detector required by this section shall operate the emergency voice/alarm communication system and shall place into operation all stair pressurization and atria fans to restrict the recirculation of smoke. Activation of any detector or any flow detector shall initiate the designed function of smoke dampers, fans, and other components of the smoke-control system unless the smoke-control system is designed or required to be manually operated only. Rate of rise detectors may be used in lieu of smoke detectors in parking garages. Smoke detectors shall be located as follows:

1. In each mechanical equipment, electrical, transformer, telephone equipment, central control station, or similar room which is not provided with sprinkler protection, elevator machine rooms, and in elevator lobbies.

2. In ~~the main return air and exhaust air plenum of each air-conditioning system having a capacity greater than 2,000 cubic feet per minute (cfm) (0.94 m³/s). Such detectors shall be located in a serviceable area downstream of the last duct inlet~~ either the return-air plenum or main supply air duct of every air conditioning and mechanical ventilating system with fans having a rated capacity of 2,200 cfm (1 m³/s) or greater. Activation of the products of combustion detector shall cut off electric current to the fan and shall operate the voice alarm signaling system of the required automatic fire alarm system.

   Exception: If air movement provided by the air conditioning system or mechanical ventilating system is a designed component of the smoke-control system, the smoke detector need not shut off the electric current to the fan.

3. At each connection to a ~~vertical~~ duct or riser serving two or more stories from a return air duct or plenum of an air-conditioning system having an air volume of 2,200 cfm (1 m³/s) or greater. ~~In Group R- 1 and R-2 occupancies, a listed smoke detector is allowed to be used in each return-air riser carrying not more than 5,000 cfm (2.4 m³/s) and serving not more than 10 air-inlet openings.~~

4. In each exit corridor within 3 feet (910 mm) of each exit-access door to a stair. When exit corridors are not clearly defined, they shall be assumed to be 8 feet (2.4 m) wide connecting exit stairways.

5. In commercial kitchens.

   Exception: Rate of rise detectors may be installed in lieu of smoke detectors, with spacing every 500 sq. ft. (47 m²).

907.2.12.2 Emergency voice/alarm communication system. The operation of any automatic fire detector~~,~~ or sprinkler water-flow device ~~or manual fire alarm box~~ shall automatically sound an alert tone followed by voice instructions giving ~~approved~~ appropriate information and directions, as approved by the code official, on a general or selective basis to the following terminal areas in accordance with the building's fire safety and evacuation plans required by Section 404:

1. Elevator lobbies.
2. Corridors.
3. Rooms and tenant spaces exceeding 1,000 square feet (93 m²) in area.
4. Dwelling units in Group R-2 occupancies.
5. Hotel ~~guestrooms~~ sleeping units or suites in Group R-1 occupancies.

6. Areas of refuge as defined in the ~~*International* *Building Code*~~.

7. Elevators.

8. Exit stairways.

The alarm shall be designed to be heard by all occupants within the building or designated portions thereof as is required for the public address system. The alarm shall sound on the floor of incidence, the floor above and the floor below.

Exception: In Group I-1 and I-2 occupancies, the alarm shall sound in a constantly attended area and a general occupant notification shall be broadcast over the overhead page.

907.2.12.3 Fire department communication system. An approved two-way, fire department communication system designed and installed in accordance with NFPA 72 shall be provided for fire department use. It shall operate between a fire command center complying with Section 509 and elevators, elevator lobbies, emergency and standby power rooms, fire pump rooms, areas of refuge and inside enclosed exit stairways. The fire department communication device shall be provided at each floor level within the enclosed exit stairway.

~~**Exception:** Fire department radio systems where approved by the fire department.~~

907.3.2 Group R owner and tenant duties. The owner or manager of a residential building shall ensure that the smoke detector(s) required by Section 907.3 of this code are installed and operational when the tenant first occupies the unit. After the tenant takes possession of the unit, it shall be the duty of the tenant to regularly test the smoke detector(s) in the unit, and the tenant shall notify the owner immediately in writing of any problem, defect, malfunction or failure of any detector in the unit. Upon notification by the tenant, or upon notification by an inspector of the jurisdiction, that a smoke detector in the residential unit is not in proper working order, the owner shall have the detector(s) repaired or replaced.

Exception: The provisions of this section do not apply to dwelling units governed by Subchapter F of Chapter 92 of the Texas Property Code.

907.10.1.2 Groups I-1 and R-1. Group I-1 and R-1 sleeping ~~accommodations~~ units in accordance with Table 907.10.1.2 shall be provided with a visible alarm notification appliance, activated by both the in-room smoke alarm and the building fire alarm system.

Houston Amendments

909.21 Maintenance. Smoke control systems shall be maintained to ensure to a reasonable degree that the system is capable of controlling smoke for the duration required. The system shall be maintained in accordance with the manufacturer's instructions and Sections 909.21.1 through 909.21.5, and in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

910.1 General. Where required by this code ~~or otherwise installed,~~ smoke and heat vents or mechanical smoke exhaust systems and curtain boards shall conform to the requirements of this section.

Exceptions:

1. ~~Frozen food~~ Warehouses used solely for storage of Class I and Class II commodities where protected by an approved automatic sprinkler system.
2. Group S-1 aircraft hangers.

910.2.1 Groups F-1 and S-1. Buildings and portions thereof used as a Group F-1 or S-1 occupancy having more than 50,000 square feet (4645 m²) in undivided area.

Exceptions:

1. Group S-1 aircraft repair hangers.
2. Buildings protected by an automatic sprinkler system.

910.2.2 Group H. Buildings and portions thereof used as a Group H occupancy as follows:

1. In Group ~~H-1,~~ H-2 or H-3, any of which are more than 15,000 square feet (1394 m²) in single floor area.
2. In areas of buildings in Group H used for storing Class 2, 3 and 4 liquids ~~and solid oxidizers~~, Class 1 and unclassified detonatable organic peroxides, Class 3 and 4 unstable (reactive) materials, or Class 2 or 3 water-reactive materials as required for a Class V hazard classification.

Exception: Buildings containing only noncombustible materials.

910.3.3 Vent locations. Smoke and heat vents shall be located 20 feet (6096 mm) or more from lines of adjacent ~~properties~~ property lines and fire walls, and 10 feet (3048 mm) or more from fire barrier walls. Vents shall be uniformly located within the roof area above high-piled storage areas, with consideration given to roof pitch, draft curtain ~~board~~ location, sprinkler head location and structural members.

TABLE 910.3
REQUIREMENTS FOR DRAFT CURTAIN ~~BOARD~~S AND SMOKE VENTING[a]

OCCUPANCY GROUP AND COMMODITY CLASSIFICATION	DESIGNATED STORAGE HEIGHT (feet)	MINIMUM DRAFT CURTAIN ~~BOARD~~ DEPTH	MAXIMUM AREA FORMED BY DRAFT CURTAINS ~~BOARDS~~ (square feet)[b]	VENT AREA TO FLOOR AREA RATIO[d,e,f]	MAXIMUM SPACING OF VENT CENTERS (feet)	MAXIMUM DISTANCE TO VENTS FROM WALL OR DRAFT CURTAIN ~~BOARDS~~[c] (feet)
Group F-1	—	0.2 × H but > 4	50,000	1:100	120	60
Group S-1 I-IV (Option 1)	# 20	6	10,000	1:100	100	60
	> 20 # 40	6	8,000	1:75	100	55
Group S-1 I-IV (Option 2)	# 20	4	3,000	1:75	100	55
	> 20 # 40	4	3,000	1:50	100	50
Group S-1 High hazard (Option 1)	# 20	6	6,000	1:50	100	50
	> 20 # 30	6	6,000	1:40	90	45
Group S-1 High hazard (Option 2)	# 20	4	4,000	1:50	100	50
	>20 # 30	4	2,000	1:30	75	40

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m².

a. Requirements for rack storage heights in excess of those indicated shall be in accordance with Chapter 24. For solid-piled storage heights in excess of those indicated, an approved engineered design shall be used.

b. ~~When areas of buildings are equipped with early-suppression fast-response (ESFR) sprinklers, the curtain boards within these areas shall be located only at the separation between the ESFR and the conventional sprinkler systems~~. When required by this table, draft curtains are required in nonsprinklered facilities; and also in sprinklered facilities, separating automatic sprinkler systems having different response time indices (RTI).

c. The distance specified is the maximum distance from any vent in a particular curtained area to walls or draft curtain ~~boards~~ which form the perimeter of the curtained area.

d. Vent ratio for standard sprinklers is 1:100.

e. Vent ratio for ELO and ESFR sprinklers is 1:200.

f. Vent ratio for high-hazard uses, sprinklered with any type of sprinkler is 1:50.

910.3.4 Draft curtains ~~boards.~~ Where ~~curtain boards are~~ required, ~~they~~ draft curtains shall be provided in accordance with this section.

Exception: Areas of buildings that are equipped with an automatic sprinkler system.

910.3.4.1 Construction. Draft curtains ~~boards~~ shall be constructed of sheet metal, lath and plaster, gypsum board, or other approved materials which provide equivalent performance that will resist the passage of smoke. Joints and connections shall be smoke tight.

910.3.4.2 Location and depth. The location and minimum depth of draft curtains ~~boards~~ shall be in accordance with Table 910.3.

Houston Amendments

912.4 Signs. A metal sign with raised letters at least 1 inch (25 mm) in size shall be mounted on all fire department connections serving fire sprinklers, or fire pump connections. Such signs shall read: AUTOMATIC SPRINKLERS or STANDPIPES or TEST CONNECTION, or a combination thereof as applicable. See Section 510.1.1 for additional identification signs requirements.

912.6 Inspection, testing and maintenance. All fire department connections shall be periodically inspected, tested and maintained in accordance with NFPA 25 and Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

CHAPTER 10
MEANS OF EGRESS

[B] SECTION 1002
DEFINITIONS

~~**ACCESSIBLE MEANS OF EGRESS.** A continuous and unobstructed way of egress travel from any point in a building or facility that provides an accessible route to an area of refuge, a horizontal exit or a public way.~~

~~**AREA OF REFUGE.** An area where persons unable to use stairways can remain temporarily to await instructions or assistance during emergency evacuation.~~

***NOTE: All other portions of Section 1002 remain as set forth in the International Fire Code.**

TABLE 1003.2.2.2
MAXIMUM FLOOR AREA ALLOWANCES PER OCCUPANT[a]

OCCUPANCY	FLOOR AREA IN SQ. FT. PER OCCUPANT
Agricultural building	300 gross
Aircraft hangars	500 gross
Airport terminal	
Concourse	100 gross
Waiting areas	15 gross
Baggage claim	20 gross
Baggage handling	300 gross
Assembly	
Gaming floors (keno, slots, etc.)	11 gross
Assembly with fixed seats	See 1003.2.2.9

Houston Amendments

Assembly without fixed seats Concentrated (chairs only– not fixed) Auditoriums, churches and chapels, dance floors, lobbies accessory to assembly occupancy, lodge rooms, reviewing stands, stadiums, waiting area Standing space Unconcentrated (tables and chairs) Conference rooms, dining rooms, drinking establishments, gymnasiums, lounges, and stages	 7 net 5 net 15 net
Bowling centers, allow 5 persons for each lane including 15 feet of runway, and for each additional area~~s~~.	7 net
Business areas	100 gross
Children's homes and homes for the aged	80 net
Courtrooms– other than fixed seating areas	40 net
Day care (for children or the aged)	35 net
Dormitories	50 gross
Educational Classroom area Shops and other vocational room areas	 20 net 50 net
Exercise rooms	50 gross
H-5 Fabrication and manufacturing areas	200 gross
Industrial areas	100 gross
Institutional areas Inpatient treatment areas Outpatient treatment areas Sleeping areas	 240 gross 100 gross 120 gross
Kitchens, commercial	200 gross
Library Reading rooms Stack area	 50 net 100 gross
Locker rooms	50 gross
Mercantile Basement and grade floor areas Areas on other floors Storage, stock, shipping areas	 30 gross 60 gross 300 gross
Parking garages	200 gross

Houston Amendments

Residential R-1, R-2, R-4 R-3	 200 gross 300 gross
Skating rinks, swimming pools Rink and pool Decks	 50 gross 15 gross
Stages and platforms	15 net
Accessory storage areas, mechanical equipment room	300 gross
Warehouses	500 gross

For SI: 1 square foot = 0.0929 m²

a. Where an occupancy or use is not specifically listed, the building official shall determine the occupant load using the occupancy or use it most nearly resembles.

1003.2.2.5 Posting of occupant load. Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place, near the main exit or exit access doorway from the room or space. Posted signs shall be of an approved legible permanent design indicating the number of occupants permitted for each room use and shall be maintained by the owner or authorized agent. When required by the code official, additional signs shall be posted in approved locations.

1003.2.9 Elevators, escalators, and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress from any other part of the building. See Section 607.2 for emergency signs at elevator landings.

~~**Exception:** Elevators used as an accessible means of egress in accordance with Section 1003.2.13.3.~~

1003.2.10.5 Power source. Exit signs shall be illuminated at all times. To ~~enure~~ ensure continued illumination for a duration of not less than 90 minutes in case of primary power loss, the exit signs shall be connected to an emergency electrical system provided from storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 604. Equipment providing emergency power for exit signs and means of egress illumination shall be maintained in an operable condition and in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

Exception: Approved exit signs that provide continuous illumination independent of external power sources for a duration of not less than 90 minutes, in case of primary power loss, are not required to be connected to an emergency electrical system.

1003.2.11.2 Illumination emergency power. The power supply for means of egress illumination shall normally be provided by the premise's electrical supply.

In the event of power supply failure, an emergency system shall automatically illuminate all of the following areas:

1. Exit access corridors, passageways, and aisles in rooms and spaces which require two or more means of egress.
2. Exit access corridors and exit stairways located in buildings required to have two or more exits.
3. Interior exit discharge elements, as permitted in Section 1006.1, in buildings required to have two or more exits.
4. The portion of the exterior exit discharge immediately adjacent to exit discharge doorways in buildings required to have two or more exits.

The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 604.

The equipment providing emergency power for means of egress illumination and exit signs shall be maintained in an operable condition and in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

~~**1003.2.13 Accessible means of egress.** Accessible means of egress shall comply with Sections 1003.2.13.1 through 1003.2.13.7.1. Accessible spaces shall be provided with not less than one accessible means of egress. Where more than one means of egress is required from any accessible space, each accessible portion of the space shall be served by not less than two accessible means of egress.~~

~~**Exception:** Accessible means of egress are not required in alterations to existing buildings.~~

~~**1003.2.13.1 General.** Each required accessible means of egress shall be continuous to a public way and shall consist of one or more of the following components:~~

1. ~~Accessible routes complying with the *International Building Code*.~~
2. ~~Stairways within exit enclosures complying with Sections 1003.2.13.2 and 1005.3.2.~~
3. ~~Elevators complying with Section 1003.2.13.3.~~
4. ~~Horizontal exits.~~
5. ~~Smoke barriers.~~

Exceptions:

1. Where the exit discharge is not accessible, an exterior area for assisted rescue must be provided in accordance with Section 1003.2.13.7.
2. Where the exit stairway is open to the exterior, the accessible means of egress shall include either an area of refuge in accordance with Section 1003.2.13.5 or an exterior area for assisted rescue in accordance with Section 1003.2.13.7.

1003.2.13.1.1 Buildings with four or more stories. In buildings where a required accessible floor is four or more stories above or below a level of exit discharge, at least one required accessible means of egress shall be an elevator complying with Section 1003.2.13.3.

Exceptions:

1. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a horizontal exit and located at or above the level of exit discharge.
2. In buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, the elevator shall not be required on floors provided with a ramp conforming to the provisions of Sections 1003.3.4.1 through 1003.3.4.12.

1003.2.13.2 Enclosed stairways. An enclosed stairway, to be considered part of an accessible means of egress, shall have a minimum clear width of 48 inches (1219 mm) minimum between handrails and shall either incorporate an area of refuge within an enlarged floor-level landing or shall be accessed from either an area of refuge complying with Section 1003.2.13.5 or a horizontal exit.

Exceptions:

1. Stairways serving a single guestroom or dwelling unit.
2. Stairways in buildings or facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. The clear width of 48 inches (1219 mm) between handrails is not required for enclosed stairways accessed from a horizontal exit.
4. Stairways serving open parking garages.

1003.2.13.3 Elevators. An elevator to be considered part of an accessible means of egress shall comply with the emergency operation and signaling device requirements of Section 211 of ASME A17.1. Standby power shall be provided in accordance with Sections 2702 and 3003 of the *International Building Code*. The elevator shall be accessed from either an area of refuge complying with Section 1003.2.13.5 or a horizontal exit.

Exceptions:

1. Elevators are not required to be accessed from an area of refuge or horizontal exit in open parking garages.
2. Elevators are not required to be accessed from an area of refuge or horizontal exit in buildings and facilities equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

1003.2.13.4 Platform lifts. Platform (wheelchair) lifts shall not serve as part of an accessible means of egress.

1003.2.13.5 Areas of refuge. Every required area of refuge shall be accessible from the space it serves by an accessible means of egress. The maximum travel distance from any accessible space to an area of refuge shall not exceed the travel distance permitted for the occupancy in accordance with Section 1004.2.4. Every required area of refuge shall have direct access to an enclosed stairway complying with Sections 1003.2.13.2 and 1005.3.2 or an elevator complying with Section 1003.2.13.3. Where an elevator lobby is used as an area of refuge, the shaft and lobby shall comply with Section 1005.3.2.5 for smokeproof enclosures except where the elevators are in an area of refuge formed by a horizontal exit or smoke barrier.

1003.2.13.5.1 Size. Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches (762 mm) by 48 inches (1219 mm) for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge. Such wheelchair spaces shall not reduce the required means of egress width. Access to any of the required wheelchair spaces in an area of refuge shall not be obstructed by more than one adjoining wheelchair space.

1003.2.13.5.2 Separation. Each area of refuge shall be separated from the remainder of the story by a smoke barrier complying with the *International Building Code*. Each area of refuge shall be designed to minimize the intrusion of smoke.

Exceptions:

1. Areas of refuge located within a stairway enclosure.
2. Areas of refuge where the area of refuge and areas served by the area of refuge are equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2.

1003.2.13.5.3 Two-way communication. Areas of refuge shall be provided with a two-way communication system between the area of refuge and a central control point. If the central control point is not constantly attended, the area of refuge shall also have controlled access to a public telephone system. Location of the central control point shall be approved by the fire department. The two-way communication system shall include both audible and visible signals.

~~**1003.2.13.5.4 Instructions.** In areas of refuge that have a two-way emergency communication system, instructions on the use of the area under emergency conditions shall be posted adjoining the communications system. The instructions shall include all of the following:~~

~~1. Directions to find other means of egress.~~

~~2. Persons able to use the exit stairway do so as soon as possible, unless they are assisting others.~~

~~3. Information on planned availability of assistance in the use of stairs or supervised operation of elevators and how to summon such assistance.~~

~~4. Directions for use of the emergency communications system.~~

~~**1003.2.13.5.5 Identification.** Each door providing access to an area of refuge from an adjacent floor area shall be identified by a sign complying with ICC/ANSI A117.1, stating: AREA OF REFUGE, and including the International Symbol of Accessibility. The sign shall be illuminated as required for exit signs where is required. Additionally, tactile signage complying with ICC/ANSI A117.1 shall be located at each door to an area of refuge.~~

~~**1003.2.13.6 Signage.** At exits and elevators serving a required accessible space but not providing an approved accessible means of egress, signage shall be installed indicating the location of accessible means of egress.~~

~~**1003.2.13.7 Exterior area for assisted rescue.** The exterior area for assisted rescue must be open to the outside air and meet the requirements of Section 1003.2.13.5.1. Separation walls shall comply with the requirements of the *International Building Code* for exterior walls. Where walls or openings are between the area for assisted rescue and the interior of the building, the building exterior walls within 10 feet (3048 mm) horizontally of a non-rated wall or unprotected opening shall be constructed as required for a minimum 1-hour fire-resistance rating with 3/4-hour opening protectives. This construction shall extend vertically from the ground to a point 10 feet (3048 mm) above the floor level of the area for assisted rescue or to the roof line, whichever is lower.~~

~~**1003.2.13.7.1 Openness.** The exterior area of refuge shall be at least 50 percent open, and the open area above the guards shall be so distributed as to minimize the accumulation of smoke or toxic gases.~~

1003.3.1 Doors. Means of egress doors shall meet the requirements of this section. Doors serving a means of egress system shall meet the requirements of this section and Section 1005.3.1. Where additional doors are provided for egress purposes, they shall conform to the requirements of this section.

Houston Amendments

Means of egress doors shall be readily distinguishable from the adjacent construction such that the doors are easily recognizable as means of egress doors. Mirrors or similar reflecting materials shall not be used on means of egress doors. Means of egress doors shall not be concealed by curtains, drapes, decorations or similar materials. Doors that are not part of an exit system but are located or arranged so that they may be mistaken for an exit shall be identified by an approved sign reading "Not an Exit" or by a sign indicating the actual character of the door.

1003.3.1.8 Locks and latches. Whenever a building or space within a building is occupied, egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

Exceptions:

1. Places of detention or restraint.

2. In buildings in occupancy ~~Group A having an occupant load of 300 or less,~~ Groups A, B, F, M and S, ~~and in churches,~~ the main exterior door or doors ~~is~~ are permitted to be equipped with ~~key operated~~ locking devices from the egress side provided:

2.1. The locking device is readily distinguishable as locked.

2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.

2.3. The use of the ~~key-locking~~ device is revokable by the code official for ~~due cause~~ failure to conform to any applicable requirement of this code or other laws.

3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface mounted hardware. The unlatching of any leaf shall not require more than one operation.

4. Doors from individual dwelling or sleeping units ~~and guestrooms~~ of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

1003.3.1.8.1 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units.

2. ~~Where a pair of doors serves a storage or equipment room, manually operated edge or surface-mounted bolts are permitted on the inactive leaf~~. When one active leaf of a pair of doors provides the required exit width, manually operated edge- or surface- mounted bolts may be used on the inactive leaf and a door closer need not be provided on the inactive leaf.

1003.3.1.8.2 Delayed egress locks. Approved, listed, delayed egress locks shall be permitted to be installed on doors serving any occupancy except Group ~~A, E and~~ H occupancies in buildings which are equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or an approved automatic smoke or heat detection system installed in accordance with Section 907, provided that the doors unlock in accordance with Items 1 through ~~6~~ 7 below. A building occupant shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.

1. The doors unlock upon actuation of the automatic sprinkler system or automatic fire detection system.
2. The doors unlock upon loss of power controlling the lock or lock mechanism.
3. The door locks shall have the capability of being unlocked by a signal from the fire command center.
4. The initiation of an irreversible process which will release the latch in not more than 15 seconds when a force of not more than 15 pounds (66 N) is applied for 1 second to the release device. Initiation of the irreversible process shall activate an audible signal in the vicinity of the door. Once the door lock has been released by the application of force to the releasing device, relocking shall be by manual means only.

   Exception: Where approved, a delay of not more than 30 seconds shall be permitted.
5. A sign shall be provided on the door located above and within 12 inches (305 mm) of the release device reading: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 [30] SECONDS.
6. Emergency lighting shall be provided at the door.
7. When delayed egress-control devices or systems are installed, they shall be maintained in accordance with *Building Code* requirements for the original installation and shall be subject to periodic testing as required by the code official.

1003.3.1.8.5 Electronic locking devices. Electronic locking devices installed on exit doors shall be installed in accordance with the *Building Code* and shall be maintained

in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

1003.3.1.8.5.1 Electronic locking device activation. Electronic locking devices installed on exit doors shall not be activated, except for installation testing, prior to required plan review, permitting and final on-site approval by the building official.

1003.3.2.3 Security gates. Security gates may be installed provided they remain open when the premises is occupied by anyone other than security personnel.

1003.3.2.4 Electronic locking devices. Electronic locking devices installed on gates or barriers serving the means of egress shall be installed in accordance with the *Building Code*, and shall be maintained in accordance with Houston Fire Department LSB Standard No. 02, "Inspection and Testing of Fire Protection and Life-Safety Equipment."

1004.3.1 Aisles. Aisles serving as a portion of the exit access in the means of egress system shall comply with the requirements of this section. Aisles shall be provided from all occupied portions of the exit access which contain seats, tables, furnishings, displays, and similar fixtures or equipment. Aisles serving assembly areas, other than seating at tables, shall comply with Section 1008. Aisles serving reviewing stands, grandstands and bleachers shall also comply with Section 1008.

The required width of aisles shall be unobstructed. Where required by the code official, approved methods for identification and maintenance of aisles shall be provided to prohibit their obstruction.

Exception: Doors, when fully opened, and handrails shall not reduce the required width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features are permitted to project into the required width 1.5 inches (38 mm) from each side.

1004.3.2.1 Construction. Corridors shall be fire-resistance rated in accordance with Table 1004.3.2.1. The corridor walls required to be fire-resistance rated shall comply with the requirements of Section 708 of the ~~*International*~~ *Building Code* for fire partitions.

Exceptions:

1. A fire-resistance rating is not required for corridors in an occupancy in Group E where each room that is used for instruction has at least one door directly to the exterior and rooms for assembly purposes have at least one-half of the

required means of egress doors opening directly to the exterior. Exterior doors specified in this exception are required to be at ground level.

2. A fire-resistance rating is not required for corridors contained within a dwelling unit or a ~~guestroom~~ sleeping unit in an occupancy in Group R.
3. A fire-resistance rating is not required for corridors in open parking garages.
4. A fire-resistance rating is not required for corridors in an occupancy in Group B which is a space requiring only a single means of egress complying with Section 1004.2.1.
5. A fire-resistance rating is not required for corridors in one-story buildings housing Groups B, F, M, and S occupancies.
6. A fire-resistance rating is not required for corridors 30 feet (9 m) or more in width.
7. In other than Type I or II construction, exterior exit balcony roof assemblies may be of heavy timber construction without concealed spaces.
8. In Groups B, F, M and S occupancies where exits are available from an open floor area.
9. In Groups B, F, M and S occupancies within a single tenant suite or space, corridors need not be separated.
10. In Groups B, F, M and S occupancies where one hour fire-resistive corridors are required, walls may terminate at a noncombustible ceiling.

TABLE 1004.3.2.1
CORRIDOR FIRE-RESISTANCE RATING

OCCUPANCY	OCCUPANT LOAD SERVED BY CORRIDOR	REQUIRED FIRE-RESISTANCE RATING (hours)	
		Without sprinkler system	With sprinkler system[c]
H-1, H-2, H-3	All	1	1
H-4, H-5	Greater than 30	1	1
A, B, E, F, M, S, U	Greater than 30	1	0
R	Greater than 10	1	1
I[a], I-4	All	Not Permitted	0
I-1, I-3	All	Not Permitted	1[b]

a. For requirements for occupancies in Group I-2, see the Group I-2 corridor requirements in Section 407.3 of the ~~*International*~~ *Building Code*.

b. For a reduction in the fire-resistance rating for occupancies in Group I-3 requirements of subdivision of resident housing areas in the ~~*International Building Code*~~, see Section 408.7.
c. Buildings or fire areas equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.

1005.3.2.4 Stairway Identification.

1005.3.2.4.1 Stairway floor number signs. A sign shall be provided at each floor landing in interior vertical exit enclosures connecting more than three stories designating the floor level, the terminus of the top and bottom the stair enclosure, and the identification of the stair. The signage shall also state the story of, and the direction the exit discharge and the availability of, roof access from the stairway for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in position which is readily visible when the doors are in the open and closed positions. See Appendix H for installation requirements.

Exception: Buildings with previously approved signs may retain those signs until the signs are replaced. The replacement signs shall be installed in accordance with Appendix H.

1005.3.2.4.2 Signs on occupancy side of stairway doors. Approved stairway identification signs shall be located at each floor level on the occupancy side of all interior vertical exit enclosures, regardless of height of the building. See Appendix H for installation requirements.

Exception: Buildings with previously approved signs may retain those signs until the signs are replaced. The replacement signs shall be installed in accordance with Appendix H.

1005.3.2.4.3 Reentry. Where stairway doors may be locked from the stairway side in accordance with the *Building Code*, provisions for reentry shall be provided. In buildings not provided with an emergency control station or where the control station is not attended at all times while the building is occupied, alternate methods for releasing stairway doors shall be provided as required by the code official.

SECTION 1010
RESERVED
~~MEANS OF EGRESS FOR EXISTING BUILDINGS~~

~~**1010.1 General.** Means of egress in existing buildings, renovations, alterations and additions shall comply with Sections 1003 through 1009, except as amended in Section 1010.~~

~~**Exception:** Mean of egress conforming to the requirements of the building code under which they were constructed shall be considered as complying means of egress if, in the opinion of the code official, they do not constitute a distinct hazard to life.~~

1010.2 Elevators, escalators, and moving walks. Elevators, escalators and moving walks shall not be used as a component of a required means of egress.

Exceptions:

1. Elevators used as an accessible means of egress where allowed by Section 1003.2.13.3.
2. Previously approved escalators and moving walks in existing buildings.

1010.3 Exit sign illumination. Exit signs shall be internally or externally illuminated. The face of an exit sign illuminated from an external source, shall have an intensity of not less than 5 foot-candles (54 lux). Internally illuminated signs shall provide equivalent luminance and be listed for the purpose.

Exception: Approved self-luminous signs that provide evenly illuminated letters shall have a minimum luminance of 0.06 foot-lamberts (0.21 cd/m²).

1010.4 Power source. Where emergency illumination is required in Section 1010.5, exit signs shall be visible under emergency illumination conditions.

Exception: Approved signs that provide continuous illumination independent of external power sources are not required to be connected to an emergency electrical system.

1010.5 Illumination emergency power. The power supply for means of egress illumination shall normally be provided by the premises' electrical supply. In the event of power supply failure, illumination shall be automatically provided from an emergency system for the following occupancies where such occupancies require two or more means of egress:

1. Group A having more than 50 occupants.

   Exception: Assembly occupancies used exclusively as a place of worship and having an occupant load of less than 300.

2. Group B buildings three or more stories in height, buildings with 100 or more occupants above or below the level of exit discharge, or buildings with 1,000 or more total occupants.
3. Group E in interior stairs, corridors, windowless areas with student occupancy, shops and laboratories.
4. Group F having more than 100 occupants.

   Exception: Buildings used only during daylight hours which are provided with windows for natural light in accordance with the *International Building Code*.

5. Group I.
6. Group M.

   Exception: Buildings less than 3,000 square feet (279 m²) in gross sales area on one story only, excluding mezzanines.

7. Group R-1.

Exception: Where each guestroom has direct access to the outside of the building at grade.

8. Group R-2 as applicable in Section 1001.1.

Exception: Where each living unit has direct access to the outside of the building at grade.

9. Group R-4.

Exception: Where each sleeping room has direct access to the outside of the building at ground level.

The emergency power system shall provide power for not less than 60 minutes and consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 604.

1010.6 Guards. Guards complying with this section shall be provided at the open sides of means of egress that are more than 30 inches (762 mm) above the floor or grade below.

1010.6.1 Height of guards. Guards shall form a protective barrier not less than 42 inches (1067 mm) high.

Exceptions:

1. Existing guards on the open side of stairs shall be not less than 30 inches (760 mm) high.
2. Existing guards within dwelling units shall be not less than 36 inches (910 mm) high.
3. Existing guards in assembly seating areas.

1010.6.2 Opening limitations. Open guards shall have balusters or ornamental patterns such that a 6-inch diameter (152 mm) sphere cannot pass through any opening up to a height of 34 inches (864 mm).

Exceptions:

1. At elevated walking surfaces for access to, and use of electrical, mechanical or plumbing systems or equipment, guards shall have balusters or be of solid materials such that a sphere with a diameter of 21 inches (533 mm) cannot pass through any opening.
2. In occupancies in Group I-3, F, H or S, the clear distance between intermediate rails measured at right angles to the rails shall not exceed 21 inches (533 mm).
3. Approved existing open guards.

1010.7 Size of doors. The minimum width of each door opening shall be sufficient for the occupant load thereof and shall provide a clear width of not less than 28 inches (711 mm). Where this section requires a minimum clear width of 28 inches (711 mm) and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 28 inches (711 mm). The maximum width of a swinging door leaf shall be 48 inches (1219 mm) nominal. Means of egress doors in an occupancy in Group I-2 used for the movement of beds shall provide a clear width not less than 41.5 inches (1054 mm). The height of doors shall not be less than 80 inches (2032 mm).

Exceptions:

1. The minimum and maximum width shall not apply to door openings that are not part of the required means of egress in occupancies in Groups R-2 and R- 3 as applicable in Section 1001.1.
2. Door openings to storage closets less than 10 square feet (0.93 m²) in area shall not be limited by the minimum width.
3. Width of door leafs in revolving doors that comply with Section 1003.3.1.3.1 shall not be limited.
4. Door openings within a dwelling unit shall not be less than 78 inches (1981 mm) in height.
5. Exterior door openings in dwelling units, other than the required exit door, shall not be less than 76 inches (1930 mm) in height.
6. Exit access doors serving a room not larger than 70 square feet (6.5 m²) shall be not less than 24 inches (610 mm) in door width.

1010.8 Opening force for doors. The opening force for interior side-swinging doors without closers shall not exceed a 5- pound (22 N) force. For other side-swinging, sliding and folding doors, the door latch shall release when subjected to a force of not more than 15 pounds (66 N). The door shall be set in motion when subjected to a force not exceeding a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a force of not more than 50 pounds (222 N). Forces shall be applied to the latch side.

1010.9 Revolving doors. Revolving doors shall comply with the following:

1. A revolving door shall not be located within 10 feet (3048 mm) of the foot or top of stairs or escalators. A dispersal area shall be provided between the stairs or escalators and the revolving doors.
2. The revolutions per minute for a revolving door shall not exceed those shown in Table 1010.9.
3. Each revolving door shall have a conforming side-hinged swinging door in the same wall as the revolving door and within 10 feet (3048 mm).

Exceptions:

Houston Amendments

1. A revolving door is permitted to be used without an adjacent swinging door for street floor elevator lobbies provided a stairway, escalator, or door from other parts of the building does not discharge through the lobby and the lobby does not have any occupancy or use other than as a means of travel between elevators and a street.
2. Existing revolving doors where the number of revolving doors does not exceed the number of swinging doors within 20 feet (6096 mm).

TABLE 1010.9
REVOLVING DOOR SPEEDS

INSIDE DIAMETER	POWER-DRIVEN-TYPE SPEED CONTROL (RPM)	MANUAL -TYPE SPEED CONTROL (RPM)
6'6"	11	12
7'0"	10	11
7'6"	9	11
8'0"	9	10
8'6"	8	9
9'0"	8	9
9'6"	7	8
10'0"	7	8

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

1010.9.1 Egress component. A revolving door used as a component of a means of egress shall comply with Section 1010.9 and all of the following conditions:

1. Revolving doors shall not be given credit for more than 50 percent of the required egress capacity.
2. Each revolving door shall be credited with not more than a 50-person capacity.
3. Revolving doors shall be capable of being collapsed when a force of not more than 130 pounds (578 N) is applied within 3 inches (76 mm) of the outer edge of a wing.

1010.10 Stair dimensions for existing stairs. Existing stairs in buildings shall be permitted to remain if the rise does not exceed 8.25 inches (210 mm) and the run is not less than 9 inches (229 mm). Existing stairs can be rebuilt.

Exception: Other stairs approved by the code official.

1010.10.1 Stair dimensions for replacement stairs. The replacement of an existing stairway in a structure shall not be required to comply with the new stairway requirements of Section 1003.3.3 where the existing space and construction will not allow a reduction in pitch or slope.

1010.11 Winders. Existing winders shall be allowed to remain in use if they have a minimum tread depth of 6 inches (152 mm) and a minimum tread depth of 9 inches (229 mm) at a point 12 inches (305 mm) from the narrowest edge.

1010.12 Circular stairways. Existing circular stairs shall be allowed to continue in use provided the minimum depth of tread is 10 inches (254 mm) and the smallest radius shall not be less than twice the width of the stairway.

1010.13 Stairway handrails. Stairways shall have handrails on at least one side. Handrails shall be located so that all portions of the stairway width required for egress capacity are within 44 inches (1118 mm) of a handrail.

Exception: Aisle stairs provided with a center handrail are not required to have additional handrails.

1010.13.1 Height. Handrail height, measured above stair tread nosings, shall be uniform, not less than 30 inches (762 mm) and not more than 42 inches (1067 mm).

1010.14 Slope of ramps. Ramp runs utilized as part of a means of egress shall have a running slope not steeper than one unit vertical in ten units horizontal (10-percent slope). The slope of other ramps shall not be steeper than one unit vertical in eight units horizontal (12.5-percent slope).

1010.15 Width of ramps. Existing ramps are permitted to have a minimum width of 30 inches (762 mm) but not less than the width required for the number of occupants served as determined by Section 1003.2.3.1.

1010.16 Fire escape stairs. Fire escape stairs shall comply with Sections 1010.16.1 through 1010.16.7.

1010.16.1 Existing means of egress. Fire escape stairs shall be permitted in existing buildings but shall not constitute more than 50 percent of the required exit capacity.

1010.16.2 Protection of openings. Openings within 10 feet (3048 mm) of fire escape stairs shall be protected by fire assemblies having a minimum of 3/4-hour fire-resistance rating.

Exception: In buildings equipped throughout with an approved automatic sprinkler system, opening protection is not required.

1010.16.3 Dimensions. Fire escape stairs shall meet the minimum width, capacity, riser height and tread depth as specified in Section 1010.10.

1010.16.4 Access. Access to a fire escape from a corridor shall not be through an intervening room. Access to a fire escape stair shall be from a door or window meeting the criteria of Table

1003.2.3.1. Access to a fire escape stair shall be directly to a balcony, landing or platform. These shall be no higher than the floor or windowsill level and no lower than 8 inches (203 mm) below the floor level or 18 inches (457 mm) below the window sill.

1010.16.5 Materials and strength. Components of fire escape stairs shall be constructed of noncombustible materials.

Fire escape stairs and balconies shall support the dead load plus a live load of not less than 100 pounds per square foot (4.78 kN/m²). Fire escape stairs and balconies shall be provided with a top and intermediate handrail on each side.

The code official is authorized to require testing or other satisfactory evidence that an existing fire escape stair meets the requirements of this section.

1010.16.6 Termination. The lowest balcony shall not be more than 18 feet (5486 mm) from the ground. Fire escape stairs shall extend to the ground or be provided with counterbalanced stairs reaching the ground.

Exception: For fire escape stairs serving 10 or fewer occupants, an approved fire escape ladder is allowed to serve as the termination for a fire escape stairs.

1010.16.7 Maintenance. Fire escapes shall be kept clear and unobstructed at all times and shall be maintained in good working order.

1010.17 Corridors. Corridors serving an occupant load greater than 30 and the openings therein shall provide an effective barrier to resist the movement of smoke. Transoms, louvers, doors and other openings shall be closed or be self-closing.

Exceptions:

1. Corridors in occupancies other than in Group H, which are equipped throughout with an approved automatic sprinkler system.
2. Patient room doors in corridors in occupancies in Group I-2 where smoke barriers are provided in accordance with the building code.
3. Corridors in occupancies in Group E where each room utilized for instruction or assembly has at least one-half of the required means of egress doors opening directly to the exterior of the building at ground level.
4. Corridors that are in accordance with the *International Building Code*.

1010.17.1 Corridor openings. Openings in corridor walls shall comply with the requirements of the *International Building Code*.

Exceptions:

1. Where 20-minute fire assemblies are required, solid wood doors at least 1.75 inches (44 mm) thick or insulated steel doors are permitted.

2. Openings protected with fixed wire glass set in steel frames.

3. Openings covered with 0.5-inch (12.7 mm) gypsum wall board or 0.75-inch (19.1 mm)plywood on the room side.

4. Opening protection is not required if the building is equipped throughout with an approved automatic sprinkler system.

1010.17.2 Dead ends. Where more than one exit or exit access doorway is required, the exit access shall be arranged such that dead ends do not exceed the limits specified in Table 1010.17.2.

Exception: A dead-end passageway or corridor shall not be limited in length where the length of the dead-end passageway or corridor is less than 2.5 times the least width of the dead-end passageway or corridor.

1010.17.3 Exit access travel distance. Exits shall be located so that the maximum length of exit access travel, measured from the most remote point to an approved exit along the natural and unobstructed path of egress travel, does not exceed the distances given in Table 1010.17.2.

1010.17.4 Common path of egress travel. The common path of egress travel shall not exceed the distances given Table 1010.17.2.

1010.18 Stairway discharge identification. A stairway in an exit enclosure which continues below the level of exit discharge shall be arranged and marked to make the direction of egress to a public way readily identifiable.

Exception: Stairs that continue one-half story beyond the level of exit discharge need not be provided with barriers where the exit discharge is obvious.

Houston Amendments

TABLE 1010.17.2
COMMON PATH, DEAD-END AND TRAVEL DISTANCE LIMITS (by occupancy)

OCCUPANCY	COMMON PATH LIMIT		DEAD-END LIMIT		TRAVEL DISTANCE LIMIT	
	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)	Unsprinklered (feet)	Sprinklered (feet)
Group A	20/75[a]	20/75[a]	20[b]	20[b]	200	250
Group B	75	100	50	50	200	250
Group E	75	75	20	20	200	250
Groups F-1, S-1[d]	75	100	50	50	200	250
Groups F-2, S-2[d]	75	100	50	50	300	400
Group H-1	25	25	0	0	75	75
Group H-2	50	100	0	0	75	100
Group H-3	50	100	20	20	100	150
Group H-4	75	75	20	20	150	175
Group H-5	75	75	20	50	150	200
Group I-1	75	75	20	20	200	250
Group I-2 (Health Care)	NR	NR	NR	NR	150	200[c]
Group I-3 (Detention and Correctional—Use Conditions II, III, IV, V	100	100	NR	NR	150[c]	200[c]
Group I-4 (Day Care Centers)	NR	NR	20	20	200	250
Group M (Mercantile)	75	100	50	50	200	250
Group R-1 (Hotels)	75	75	50	50	200	250
Group R-2[c] (Apartments)	75	75	50	50	200	250
Group R-3[c] (One and Two Family); use Group R-4 (Residential Care/Assisted Living)	NR	NR	NR	NR	NR	NR
Group U	75	75	20	20	200	250

Group M (Covered Mall)	75	100	50	50	200	400

For SI: 1 foot = 304.8 mm.
a. 20 feet for common path serving less than 50 persons; 75 feet for common path serving 50 or more persons.
b. See Section 1008.7.5 for dead-end aisles in Group A occupancies.
c. This dimension is for the total travel distance, assuming incremental portions have fully utilized their allowable maximums. For travel distance within the room, and from the room exit access door to the exit, see the appropriate occupancy chapter.
d. See the *International Building Code* for special requirements on spacing of doors in aircraft hangars.
e. As applicable in Section 1001.1.
NR = No requirements.

1010.19 Exterior stairway protection. Exterior exit stairs shall be separated from the interior of the building as required in Section 1005.3.2.1. Openings shall be limited to those necessary for egress from normally occupied spaces.

Exceptions:

1. Separation from the interior of the building is not required for buildings that are two stories or less above grade where the level of exit discharge is the first story above grade.
2. Separation from the interior of the building is not required where the exterior stairway is served by an exterior balcony that connects two remote exterior stairways or other approved exits, with a perimeter that is not less than 50 percent open. To be considered open, the opening shall be a minimum of 50 percent of the height of the enclosing wall, with the top of the opening not less than 7 feet (2134 mm) above the top of the balcony.
3. Separation from the interior of the building is not required for an exterior stairway located in a building or structure that is permitted to have unenclosed interior stairways in accordance with Section 1005.3.2.
4. Separation from the interior of the building is not required for exterior stairways connected to open-ended corridors, provided that:
    - 4.1. The building, including corridors and stairs, is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.
    - 4.2. The open-ended corridors comply with Section 1004.3.2.
    - 4.3. The open-ended corridors are connected on each end to an exterior exit stairway complying with Section 1005.3.6.
    - 4.4. At any location in an open-ended corridor where a change of direction exceeding 45 degrees occurs, a clear opening of not less than 35 square feet (3 m^2) or an exterior stairway shall be provided. Where clear openings are provided, they shall be located so as to minimize the accumulation of smoke or toxic gases.

Houston Amendments

~~**1010.20 Minimum aisles width.** The minimum clear width of aisles shall be:~~

~~1. Forty-two inches (1067 mm) for aisle stairs having seating on each side.~~

~~**Exception:** Thirty-six inches (914 mm) where the aisle does not serve more than 50 seats.~~

~~2. Thirty-six inches (914 mm) for stepped aisles having seating on only one side.~~

~~**Exception:** Thirty inches (760 mm) for catchment areas serving not more than 60 seats.~~

~~3. Twenty inches (508 mm) between a stepped aisle handrail or guard and seating when the aisle is subdivided by the handrail.~~

~~4. Forty-two inches (1067 mm) for level or ramped aisles having seating on both sides.~~

~~**Exception:** Thirty-six inches (914 mm) where the aisle does not serve more than 50 seats.~~

~~5. Thirty-six inches (914 mm) for level or ramped aisles having seating on only one side.~~

~~**Exception:** Thirty inches (760 mm) for catchment areas serving not more than 60 seats.~~

~~6. Twenty-three inches (584 mm) between a stepped stair handrail and seating where an aisle does not serve more than five rows on one side.~~

CHAPTER 11
AVIATION FACILITIES

1106.19.1.2 ~~Monthly~~ Quarterly inspection. A more thorough inspection, performed as described in Section 3-16.2, NFPA 407 including working pressure testing, shall be accomplished for each hose on a ~~monthly~~ quarterly basis. This inspection shall include examination of the fuel delivery nozzle inlet screen for rubber particles, which indicates problems with the hose lining.

1106.19.2 Damaged hose. Hose that has been subjected to severe abuse, such as a severe end-pull, flattening or crushing by a vehicle, or sharp bend or kinking shall be immediately removed from service. Such hoses shall be hydrostatically tested in accordance with the manufacturer's recommendations prior to being returned to service.

CHAPTER 14

FIRE SAFETY DURING CONSTRUCTION AND DEMOLITION

1404.2 Waste disposal. Combustible debris shall not be accumulated within or around storage areas and buildings. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work. Combustible debris, rubbish and waste material shall not be allowed to accumulate around or overflow from dumpsters. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site ~~unless approved~~.

1404.2.1 Use of dumpsters. Combustible waste storage dumpsters shall be used and maintained in accordance with Section 304.

1416.1 ~~General.~~ ~~Roofing operations utilizing heat-producing systems or other ignition sources shall be performed by a contractor licensed and bonded for the type of roofing process to be performed.~~ **Permits.** Permits are required for the use of asphalt kettles and for roof torching operations. See Section 105.6.

1416.4 Torches and other flame-producing devices. Use of torches or other flame-producing devices for application of roofing membranes is prohibited.

Exception: When approved by the code official, roofing operations shall be conducted in accordance with Houston Fire Department LSB Standard No. 11, "Roofing Operations."

CHAPTER 15
FLAMMABLE FINISHES

1504.1 Location of spray-finishing operations. Spray-finishing operations conducted in buildings used for Group A, E, I or R occupancies shall be located in a spray room protected with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 and separated vertically and horizontally from other areas in accordance with the ~~*International*~~ *Building Code*. In other occupancies, spray-finishing operations shall be conducted in a spray room, spray booth or limited spraying space approved for such use. Outside spraying or spray-finishing operations in basements or sub-basements are prohibited except when approved by the code official.

CHAPTER 22
SERVICE STATIONS AND REPAIR GARAGES

2201.1 Scope. Automotive service stations, marine service stations, fleet vehicle service stations and repair garages shall be in accordance with this chapter and the ~~*International Fuel Gas Code*~~, ~~*International*~~ *Building Code*, and the ~~*International*~~ *Mechanical Code*. Such operations shall include both public accessible and private operations.

Note: See applicable provisions of state law and regulations adopted by the Texas Commission on Fire Protection and the Railroad Commission of Texas for additional requirements.

2201.3 Construction documents. Construction documents with plans and specifications shall be submitted for review and approval prior to the installation or construction of automotive, marine, or fleet vehicle service stations and repair garages in accordance with Section 105.4. A site plan shall be submitted that illustrates the location of flammable liquid, LP-gas, LNG or CNG storage vessels and their spatial relation to each other, property lines and building openings. Both above-ground and underground storage vessels shall be shown on plans. For each type of station, plans and specifications shall include, but not limited to, the following:

1. **Flammable and Combustible Liquids:** the type and design of underground and aboveground liquid storage tanks; the location and design of the fuel dispensers and dispenser nozzles; the design and specifications for related piping, valves and fittings; the location and classification of electrical equipment, including emergency fuel shutdown devices; and specifications for fuel storage and venting components.
2. **Liquefied Petroleum Gas:** equipment and components as required in NFPA 58 and the Liquefied Petroleum Gas Safety Rules of the Railroad Commission of Texas; the location and design of the LP-gas dispensers and dispenser nozzles; the design, specifications and location of related piping, valves and fittings; the location and classification of electrical equipment, including emergency fuel shutdown devices; and specifications for fuel storage and pressure-relief components.
3. **Compressed Natural Gas:** when provided, the location of CNG compressors; the location and design of CNG dispensers and vehicle fueling connections; the design, specifications and location for related piping, valves and fittings; the location and classification of electrical equipment, including emergency fuel shutdown devices; and specifications for fuel storage and pressure-relief components. All installations shall be in accordance with this section, the Regulations for Compressed Natural Gas of the Railroad Commission of Texas, and NFPA 52.

4. **Liquefied Natural Gas:** equipment and components as required by NFPA 57; the location and design of the LNG dispensers and dispenser nozzles; the design, specifications and location for related piping, valves and fittings; the location and classification of electrical equipment, including emergency fuel shutdown devices; and specifications for fuel storage and pressure-relief components.

2203.2 Emergency disconnect switches. An approved, clearly identified and readily accessible emergency disconnect switch shall be provided at an approved location, to stop the transfer of fuel to the fuel dispensers in the event of a fuel spill or other emergency. An emergency disconnect switch for exterior fuel dispensers shall be located within 100 feet (30 480 mm) of, but not less than 20 feet (6096 mm) from, the fuel dispensers. For interior fuel-dispensing operations, the emergency disconnect switch shall be installed at an approved location. Such devices shall be distinctly labeled as: EMERGENCY FUEL SHUTOFF. The sign lettering shall be not less than 2 inches (50 mm) in height on a background of contrasting color so that the lettering is clearly visible. Signs shall be provided in approved locations.

2206.7.3 Mounting of dispensers. Dispensing devices shall be protected against physical damage by mounting on a concrete island 6 inches or more (152 mm) in height, installing on top of a protected above-ground tank which qualifies as vehicle-impact resistant, or in accordance with Section 312. Dispensing devices shall be installed and securely fastened to their mounting surface in accordance with the dispenser manufacturer's instructions. Dispensing devices installed indoors shall be located in an approved position where they cannot be struck by an out-of-control vehicle descending a ramp or other slope. LP-gas dispensers shall be in accordance with Section 2207 and the Liquified Petroleum gas Safety Rules of the Railroad Commission of Texas.

CNG dispensers shall be in accordance with the Regulations for Compressed Natural Gas of the Railroad Commission of Texas and NFPA 52. LNG dispensers shall be in accordance with NFPA 57.

2207.4.1 Limits established by law. The storage and dispensing of LP-gas is prohibited within the district of limitations established in Section 203, except as provided for in Houston Fire Department LSB Standard No. 10, "LP-Gas & Open Flame Use."

2208.1 General. Service stations for compressed natural gas (CNG) fuel shall be in accordance with this section and Chapter 30 and the Regulations for Compressed Natural Gas of the Railroad Commission of Texas.

2208.3 Location of dispensing operations and equipment. Compression, storage and dispensing equipment shall be located above ground, outside.

Exceptions:

1. Compression, storage or dispensing equipment shall be allowed in buildings of noncombustible construction, as set forth in the ~~*International* *Building Code*~~, which are unenclosed for three quarters or more of the perimeter.
2. Compression, storage and dispensing equipment shall be allowed indoors in accordance with Chapter 30.
3. Storage and dispensing of CNG is prohibited within the districts of limitations established in Section 203.

SECTION 2211
LIQUEFIED NATURAL GAS MOTOR VEHICLE FUEL-DISPENSING STATIONS

2211.1 General. Automotive, marine and aircraft motor vehicle fuel-dispensing stations utilizing LNG shall be in accordance with this section.

2211.2 Standards. LNG motor vehicle fuel-dispensing operations and facilities shall be in accordance with NFPA 57 and NFPA 59-A.

2211.3 Limits established by law. The storage and dispensing of LNG is prohibited within the districts of limitations established in Section 203.

Houston Amendments

CHAPTER 23

HIGH-PILED COMBUSTIBLE STORAGE

TABLE 2306.2
GENERAL FIRE PROTECTION AND LIFE SAFETY REQUIREMENTS

COMMODITY CLASS	SIZE OF HIGH-PILED STORAGE AREA[a] (square feet) (see Sections 2306.2 and 2306.4)	ALL STORAGE AREAS (See Sections 2306, 2307, and 2308)[b]					SOLID-PILED STORAGE, SHELF STORAGE AND PALLETIZED STORAGE (see Section 2307.3)		
		Automatic fire-extinguishing system (see Section 2306.4)	Fire detection system (see Section 2306.5)	Building access (see Section 2306.6)	Smoke and heat removal (see Section 2306.7)	Draft Curtains ~~boards~~ (see Section 2306.7)	Maximum pile dimension[c] (Feet)	Maximum permissible storage height[d] (feet)	Maximum pile volume (cubic feet)
I-IV	0-500	Not Required[a]	Not Required	Not Required[e]	Not Required	Not Required	Not Required	Not Required	Not Required
	501-2,500	Not Required[a]	Yes [i]	Not Required[e]	Not Required	Not Required	100	40	100,000
	2,501-12,000 Public accessible	Yes	Not Required	Not Required[e]	Not Required	Not Required	100	40	400,000
	2,501-12,000 Nonpublic accessible (Option 1)	Yes	Not Required	Not Required[e]	Not Required	Not Required	100	40	400,000
	2,501-12,000 Nonpublic accessible (Option 2)	Not Required[a]	Yes	Yes	Yes	Yes~~[i]~~	100	30[f]	200,000
	12,001-20,000	Yes	Not Required	Yes	Yes	~~Not Required~~ Yes[j]	100	40	400,000
	20,001-500,000	Yes	Not Required	Yes	Yes	~~Not Required~~ Yes[j]	100	40	400,000
	Greater than 500,000[h]	Yes	Not Required	Yes	Yes	~~Not Required~~ Yes[j]	100	40	400,000
High Hazard	0-500	Not Required[a]	Not Required	Not Required[e]	Not Required	Not Required	50	Not Required	Not Required
	501-2,500 Public accessible	Yes	Not Required	Not Required[e]	Not Required	Not Required	50	30	75,000
	501-2,500 Nonpublic accessible (Option 1)	Yes	Not Required	Not Required[e]	Not Required	Not Required	50	30	75,000
	501-2,500 Nonpublic accessible (Option 2)	Not Required[a]	Yes	Yes	Yes	Yes~~[i]~~	50	20	50,000
	2,501-300,000	Yes	Not Required	Yes	Yes	~~Not Required~~ Yes[j]	50	30	75,000
	300,001-500,000[g,h]	Yes	Not Required	Yes	Yes	~~Not Required~~ Yes[j]	50	30	75,000

For SI: 1 foot = 304.8 mm, 1 cubic foot = 0.02832 m^3 , 1 square foot = 0.0929 m^2.

a. When automatic sprinklers are required for reasons other than those in Chapter 23, the portion of the sprinkler system protecting the high-piled storage area shall be designed and installed in accordance with Sections 2307 and 2308.

b. For aisles, see Section 2306.9.
c. Piles shall be separated by aisles complying with Section 2306.9.
d. For storage in excess of the height indicated, special fire protection shall be provided in accordance with Note g when required by the code official. See also Chapters 28 and 34 for special limitations for aerosols and flammable and combustible liquids.
e. Section 503 shall apply for fire apparatus access.
f. For storage exceeding 30 feet in height, Option 1 shall be used.
g. Special fire protection provisions such as, but not limited to, fire protection of exposed steel columns; increased sprinkler density; additional in-rack sprinklers, without associated reductions in ceiling sprinkler density; or additional fire department hose connections shall be provided when required by the code official.
h. High-piled storage areas shall not exceed 500,000 square feet. A 2-hour fire wall constructed in accordance with the ~~*International*~~ *Building Code* shall be used to divide high-piled storage exceeding 500,000 square feet in area.
i. Not required when an automatic fire-extinguishing system is designed and installed to protect the high-piled storage area in accordance with Sections 2307 and 2308.
j. See Section 910.3.4.

2306.6 Building access. Where building access is required by Table 2306.2, fire apparatus access roads in accordance with Section 503 shall be provided within 150 feet (45 720 mm) of all portions of the exterior walls of buildings used for high piled storage.

Exceptions:

1. Where fire apparatus access roads cannot be installed because of topography, railways, waterways, nonnegotiable grades or other similar conditions, provided that the code official is authorized to require additional fire protection.

2. The code official may authorize deviations from the provisions of this section to allow access to no less than 60 percent of the perimeter of the entire building, provided the building is completely protected with an approved automatic fire sprinkler system and has either:

   2.1 An approved wet firefighting system that utilizes 2-1/2 inch (64 mm) discharge hose connections installed adjacent to each fire department access door not fronting an access roadway and is capable of delivering a minimum of 500 gallons per minute (1,893 L/m) through the 2-1/2 inch (64 mm) discharge connections, in accordance with NFPA standards; *or*

   2.2 An approved dry firefighting system that incorporates each of the following:

      2.2.1 2-1/2 inch (64 mm) discharge hose connections installed adjacent to each fire department access door not fronting an access road.

      2.2.2 Minimum 4 inch (102 mm) IPS pipe for up to and including 1,000 feet (305 m) in length, or 6 inches (152 mm) IPS pipe for over 1,000 feet (305 m) in length.

      2.2.3 Fire department connections (FDC) installed at approved locations identified by signs stating "DRY PIPE HOSE SYSTEM" installed on or immediately adjacent to each FDC , which signs shall be permanent, durable and reflective in nature with lettering design in Helvetica Medium and a minimum height size of 2 inches (50 mm).

Houston Amendments

For requirements on water supply, see Section 508.

2306.6.1.1 Number of doors required. A minimum of one access door shall be provided in each ~~100~~ 105 lineal feet (~~30 480~~ 32 004 mm), or fraction thereof, of the exterior walls. ~~which face required fire apparatus access roads.~~

2306.6.1.4 Marking of access doors. Firefighter access doors shall be labeled with "**HFD**." on the exterior in the top left hand corner. The letters shall be not less than four inches (100 mm) in height on a contrasting background. Lettering shall be legible, durable, and reflective in nature.

CHAPTER 26
WELDING AND OTHER HOT WORK

2603.7 Roofing operations utilizing flame-producing devices. Use of torches or other flame producing devices for application of roofing membranes is prohibited. See Section 1416.

Exception: When approved by the chief, roofing operations shall be conducted in accordance with Houston Fire Department LSB Standard No. 11, "Roofing Operations."

2605.1.1 Backflow protection. Backflow protection shall be provided by approved devices that will prevent oxygen from flowing into fuel gas hoses or systems, and prevent fuel gas from entering oxygen hoses or systems. The devices shall incorporate flashback prevention.

2605.2.1 Cylinder handling. When moving compressed gas cylinders by crane, suitable cradles shall be used to reduce the possibility of dropping cylinders. Ordinary rope slings or electromagnets shall not be used.

2605.2.2 Separation of cylinders from operation. Oxygen cylinders, fuel-gas cylinders and acetylene generators shall be placed far enough away from welding operations that they will not be unduly heated by radiation from heated materials, sparks slag, or misdirection of the torch flame.

2605.2.3 Gas transfer and mixing. The user shall not transfer gases from one cylinder to another or mix gases in a cylinder.

2605.4.1 Liquid. The use of liquid acetylene is prohibited.

2605.9 Hoses and hose connections. Hoses and connections shall be in accordance with this section.

2605.9.1 Inspection of hoses. Damaged, leaking or worn hoses shall not be used. Each hose shall be inspected frequently for leaks, burns, tears, loose connections or other defects that could render the hose unfit for service. Where a hose shows excessive wear or has been subjected to flashback, it shall be inspected and tested at twice the normal pressure to which it is subjected in service, but not less than 200 pounds per square inch (1,379 kPa) before being returned to service.

Houston Amendments

2605.9.2 Pressure rating. Hoses shall be capable of withstanding a hydrostatic pressure of 800 pounds per square inch (5,516 kPa).

2605.9.3 Construction. A single hose having more than one gas passage, a wall failure of which would permit the flow of one gas into the other gas passage, shall not be used. Where two hoses joined by a web so as to form integral lengths of double hose are used, the two hoses shall be identified as follows:

1. By exterior color, such as green for oxygen and red for acetylene; *or*
2. If the entire exterior of both passages is of the same color, the two sides shall be distinguished by feel or touch, such as by smooth versus ribbed or rough exterior surfaces.

2605.9.4 Taping of multiple hoses. Where parallel lengths of oxygen and acetylene hose are taped together for convenience and to prevent tangling, not more than 4 inches (100 mm) out of each 8 inches (220 mm) shall be covered by tape.

2605.9.5 Hose connections. Hose connections shall be clamped or otherwise securely fastened in a manner that will withstand, without leakage, twice the pressure to which they are normally subjected in service, but not less than 300 pounds per square inch (2,068 kPa).

CHAPTER 27

HAZARDOUS MATERIALS—GENERAL PROVISIONS

2703.9.2 Security. When required by the code official, ~~S~~ storage, dispensing, use and handling areas shall be secured against unauthorized entry and safeguarded with such protective facilities as the public safety requires. When security fences are installed, the fences shall be:

1. Substantially built of iron, steel or concrete that is fabricated and installed in accordance with the *Building Code*.
2. No portion of the fence shall be less than 6 feet (1830 mm) above the surrounding floor or ground surface.
3. Topped by three rows of barbed wire, 4 inches (100 mm) apart that is applied in a manner authorized by the *City Code*.
4. Equipped with necessary openings that are designed and fabricated to provide security equivalent to the fence and remain locked at all times except when in use by authorized personnel.
5. Located 5 feet (1525 mm) or more from the tank, valves or piping.

Note: For LP-gas transfer and storage facilities see Section 3807.4.

CHAPTER 30
COMPRESSED GASES

3005.10.2 Lifting devices. Ropes, chains, ~~or~~ slings or electromagnets shall not be used to suspend compressed gas containers, cylinders and tanks unless provisions at time of manufacture have been made on the container, cylinder or tank for appropriate lifting attachments, such as lugs. To reduce the possibility of dropping compressed gas cylinders when moving them by crane, suitable cradles shall be used.

SECTION 3007
MEDICAL OXYGEN IN PATIENT AREAS

3007.1 General. The storage, handling, and use of medical oxygen in patient areas shall be in accordance with this section in addition to other requirements of this code.

3007.2 Use of smoking materials. No smoking materials, open flames, spark- or flame-producing devices, portable electrical space heaters, or other burning combustible materials shall be used in any patient area where medical oxygen is in use and for at least 30 minutes after the use of oxygen in the area has been discontinued.

3007.3 "Oxygen in use" signs. In rooms where medical oxygen is in use, the owner, manager operator, or person in charge of any hospital, clinic, day surgery, dialysis unit, medical school, dental school, medical lab, blood bank, nursing home, or related facility, shall display at least two signs to read “No Smoking- Oxygen in Use.”

The signs shall be printed in letters at least 1 ½ inch (40 mm) in height on highly contrasting background. The remainder of the lettering shall be readily readable. Signs may be on cardboard, metal, or plastic. The signs shall not be less than 6 inches (150 mm) in length and 4 inches (100 mm) in width, unless otherwise approved by the code official.

One sign shall be posted upon the door leading into a patient's room and another shall be posted upon or readily adjacent to the oxygen unit, where it will be unobstructed and readily visible.

CHAPTER 32
CRYOGENIC FLUIDS

3203.6.1.2 Surfaces beneath containers. The surface of the area on which stationary containers are placed, including the surface of the area located below the point where connections are made for the purpose of filling such containers, shall be compatible with the fluid in the container. For liquid oxygen stationary containers, surfacing of noncombustible material shall be provided at ground level under liquid delivery connections for the storage container(s) and the delivery vehicle. Asphaltic and bitumastic paving or organic material (wood, wood by products or similar materials) shall not be used as paving materials. This area shall be at least 3 feet (910 mm) in diameter from points at ground level upon which leakage of liquid oxygen might occur during unloading and normal operation of the system. The area under the mobile supply equipment shall be at least the full width of the vehicle and at least 8 feet (2.4 m) in the direction of the vehicle axis. The layout of the slope, if any, of such areas shall consider possible flow of spilled liquid oxygen to adjacent combustible materials. The area around the stationary containers, fill connections and delivery pad shall be kept clear of all trash and organic matter.

CHAPTER 33
EXPLOSIVES AND FIREWORKS

3301.1.3 Fireworks. The possession, manufacture, transportation, storage, sale, handling and use of fireworks are prohibited.

Exceptions:

1. Storage and handling of fireworks as permitted in Section 3304.
2. ~~Manufacture, assembly and testing of fireworks as permitted in Section 3305.~~
3. The use of fireworks for display as permitted in Section 3308.
4. ~~The possession, storage, sale, handling and use of specific types of Division 1.4G fireworks where allowed by applicable local or state laws, ordinances and regulations provided such fireworks comply with CPSC 16 CFR, Parts 1500-1507, and DOTn 49 CFR, Parts 100-178, for consumer fireworks.~~
3. Fireworks being transported in international, intrastate, or interstate commerce through the jurisdiction between points of origin and destination outside of the jurisdiction in accordance with all applicable municipal or state laws, ordinances, and regulations, provided the fireworks comply with federal regulations CPSC 16 CFR, Parts 1500-1507, and DOTn 49, Parts 100-178, for consumer fireworks. The provisions of this exception shall extend only to bona fide commercial transportation and distribution of fireworks in commercial quantities among manufacturers, wholesalers and dealers. Transportation shall be by way of established hazardous materials transportation routes through and around the jurisdiction.

3301.1.3.1 Seizure of fireworks. The presence of any fireworks within this jurisdiction in violation of this chapter is hereby declared to be a common and public nuisance. The code official is directed and required to seize and cause to be safely destroyed any fireworks found in violation of this code. Any member of the Life Safety and Fire Prevention Bureau of the Houston Fire Department or any police officer of the jurisdiction is empowered to stop the transportation of and detain any fireworks found being transported illegally.

3301.1.6 Limits established by law. Storage, handling and use of explosive materials is prohibited within the districts of limitations established by Section 203.

Exceptions:

1. Where permitted and approved by the code official and building official during construction and demolition, and in accordance with Sections 1407 and 3308.
2. Pyrotechnical displays and special effects, in accordance with Section 3308.

3305.1 General. The manufacture, assembly and testing of explosives, ammunition~~;~~ and blasting agents ~~and fireworks~~ shall comply with the requirements of this section and NFPA 495. ~~or NFPA 1124.~~

Exceptions:

1. The hand loading of small arms ammunition prepared for personal use and not offered for resale.
2. The mixing and loading of blasting agents at blasting sites in accordance with NFPA 495.
3. The use of binary explosives or ~~plosophoric~~ phosphoric materials in blasting or pyrotechnic special effects applications in accordance with NFPA 495 or NFPA 1126.

3305.1.1 Manufacturing of fireworks prohibited. The manufacturing of fireworks is prohibited, and no provision of this section shall be construed to authorized the manufacturing of fireworks within the jurisdiction.

3305.3 Intraplant separation of operating buildings. All mass-detonating Division 1.1 and 1.2 explosives ~~and fireworks-~~ manufacturing buildings, including those where explosive charges are assembled, manufactured, prepared or loaded, shall be separated from all other buildings, including magazines, within the confines of the manufacturing plant at a distance not less than those shown in Table 3305.3 when the buildings are barricaded.

~~**Exception:** Fireworks-manufacturing buildings separated in accordance with NFPA 1124.~~

3305.4 Separation of manufacturing buildings for inhabited buildings, rights-of-way, and magazines. When a manufacturing building on an explosive materials plant site is designed to contain explosive materials, such building shall be located from inhabited buildings, public highways, and passenger railways in accordance with Table 3304.5.2(2) based on the maximum quantity of explosive materials permitted to be in the building at one time.

~~**Exception:** Fireworks-manufacturing buildings constructed and operated in accordance with NFPA 1124.~~

3305.5 Buildings and equipment. Buildings or rooms which exceed the maximum allowable quantity per control area of explosive materials shall be operated in accordance with this section and constructed in accordance with the requirements of the ~~*International*~~ *Building Code* for Group H occupancies.

~~**Exception:** Fireworks- and explosives-manufacturing buildings constructed and operated in accordance with NFPA 1124 and NFPA 495, respectively.~~

3305.6.8 ~~Pyrotechnic and e~~ Explosive composition quantity limits. Not more than 500 pounds (227 kg) of ~~pyrotechnic or~~ explosive composition, including not more than 10 pounds (5 kg) of salute powder shall be permitted at one time in any process building or area. All compositions not in current use shall be kept in covered nonferrous containers.

~~**Exception:** Composition that has been loaded or pressed into tubes or other containers as consumer fireworks.~~

3305.6.9 Posting limits. The maximum number of occupants and maximum weight of ~~pyrotechnic and~~ explosive composition permitted in each process building shall be posted in a conspicuous location in each process building or magazine.

3305.6.10 Heat sources. ~~Fireworks,~~ Explosives or explosive charges in explosive materials manufacturing, assembly or testing shall not be stored near any source of heat.

Exception: Approved drying or curing operations.

3305.8 Explosive materials testing sites. Detonation of explosive materials ~~or ignition of fireworks~~ for testing purposes shall be done only in isolated areas at sites where distance, protection from missiles, shrapnel or flyrock, and other safeguards provides protection against injury to personnel or damage to property.

3308.2 Permit application. A permit to store, handle and use fireworks displays and pyrotechnic special effects materials shall be granted only to a pyrotechnic operator approved by the code official. Prior to issuing permits for fireworks display, plans for the display, inspections of the display site, and demonstrations of the display operations shall be approved. See Section 105.6 and Houston Fire Department LSB Standard No. 12, "Fireworks Display."

3308.2.1 Outdoor displays. In addition to the requirements of Section 403, permit applications for outdoor fireworks displays using Division 1.3G fireworks shall include a diagram of the location at which the display will be conducted, including the site from which fireworks will be discharged; the location of buildings, highways, overhead obstructions and utilities; and the lines behind which the audience will be restrained. As part of the review of the permit application, the

fire chief's office shall be consulted regarding requirements for standby fire apparatus. Also, see Section 112 and Houston Fire Department LSB Standard No. 12, "Fireworks Display."

3308.2.2 Proximate audience displays. Where the separation distances required by Section 3308.4 and NFPA 1123 are unavailable or cannot be secured, only proximate audience displays conducted in accordance with NFPA 1126 shall be permitted. Applications for proximate audience displays shall include plans indicating the required clearances for spectators and combustibles, crowd control measures, smoke control measures, and requirements for standby personnel and equipment when provision of such personnel or equipment is required by the code official in accordance with Section 112.

3308.3 Approved displays. Approved displays shall include only the approved Division 1.3G, Division 1.4G, and Division 1.4S fireworks, shall be handled by an approved ~~competent~~ pyrotechnic operator, and the fireworks shall be arranged, located, discharged and fired in a manner that will not pose a hazard to property or endanger any person. The pyrotechnic operator shall be responsible for all aspects of a display related to pyrotechnics storage, handling and use.

3308.11 Retail display and sale. The display and sale of fireworks is prohibited within the jurisdiction. ~~Fireworks displayed for retail sale shall not be made readily accessible to the public. A minimum of one pressurized-water portable fire extinguisher complying with Section 906 shall be located not more than 15 feet (4572 mm) and not less than 10 feet (3048 mm) from the hazard. "No Smoking" signs complying with Section 310 shall be conspicuously posted in areas where fireworks are stored or displayed for retail sale~~.

CHAPTER 34
FLAMMABLE AND COMBUSTIBLE LIQUIDS

3401.2 Nonapplicability. This chapter shall not apply to liquids as otherwise provided in other laws or regulations or chapters of this code, including:

1. Specific provisions for flammable liquids in service stations, airports and marinas in Chapter 22.
2. Medicines, foodstuffs, and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solution not being flammable and alcoholic beverages in retail sales or storage uses when packaged in individual containers not exceeding 1.3 gallons (5 L).
3. Storage and use of fuel oil tanks and containers connected to oil-burning equipment. Such storage and use shall be in accordance with Section 603. For abandonment of fuel oil tanks, this chapter applies.
4. Refrigerant liquids and oils in refrigeration systems (see Section 606).
5. Storage and display of aerosol products complying with Chapter 28.
6. Storage and use of liquids that have no fire point when tested in accordance with ASTM D 92.
7. Liquids without flash points that can be flammable under some conditions, such as certain halogenated hydrocarbons and mixtures containing halogenated hydrocarbons.
8. The storage of distilled spirits and wines in wooden barrels and casks.
9. Transportation of flammable and combustible liquids when in accordance with DOTn regulations on file with and approved by DOTn.

3401.4 Permits. Permits shall be required as set forth in Sections 105.6 ~~and 105.7~~.

Exception: A permit is not required for any activity where the requirement of local permits is preempted by federal or state law.

3403.5.5 Security. When required by the code official, storage areas, tanks, piping, valves, regulating equipment and accessories shall be protected against tampering or trespassers by fencing or other control measures in accordance with Section 2703.9.2.

3403.6.9.2 Swing joints. Approved swing joints shall be installed on all underground liquid, vapor and vent piping where the piping leaves the dispensing island or location and just before where the pipe connects to any underground tank fittings. Swing joints shall also be installed on piping that is rigidly supported or connected between fixed points and that is subject to thermal expansion or differential movements. No pipe nipple used in connection with a double swing joint or where piping joins tanks shall exceed 12 inches (300 mm) in length.

Exception: Listed flexible connectors are allowed in lieu of swing joints when approved by the code official.

3404.2.9.5.1 Locations where above-ground tanks are prohibited. Storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited within the limits established by law in the ~~adopting ordinance as the limits of~~ districts of limitations as established in ~~which such storage is prohibited~~ Section 203.

3404.2.9.5.3 Separation between adjacent tanks containing flammable or combustible liquids and LP-gas, LNG and CNG containers. The minimum horizontal separation between an LP-gas, LNG or CNG container and a Class I, II or IIIA liquid storage tank shall be 20 feet (6096 mm) except in the case of Class I, II or IIIA liquid tanks operating at pressures exceeding 2.5 psig (17.2 kPa) or equipped with emergency venting allowing pressures to exceed 2.5 psig (17.2 kPa), in which case the provisions of Section 3404.2.9.5.2 shall apply.

An approved means shall be provided to prevent the accumulation of Class I, II or III A liquids under adjacent LP-gas, LNG or CNG containers such as by dikes, diversion curbs or grading. When flammable or combustible liquid storage tanks are within a diked area, the LP gas, LNG or CNG containers shall be outside the diked area and at least 10 feet (3048 mm) away from the centerline of the wall of the diked area.

Exceptions:

1. Liquefied petroleum LP-gas, LNG and CNG containers of 125 gallons (473 L) or less in capacity installed adjacent to fuel-oil supply tanks of 660 gallons (2498 L) or less in capacity.
2. Horizontal separation is not required between above-ground LP-gas, LNG or CNG containers and underground flammable and combustible liquid tanks.

3404.2.12.3 Existing Tanks and Piping. Existing underground storage tanks and piping shall be tested for leakage at the owner's or operator's expense when the code official has

reasonable cause to believe a leak exists. Orders by the code official requiring testing on underground tanks or piping shall indicate that the test be completed by a specified date. If required tests are not completed within the specified time, the tanks shall be emptied of flammable or combustible liquids, and the piping and other equipment shall not be used.

When testing is required, owners or operators shall provide the code official with data setting forth the method of testing that is to be used and shall submit the name of a qualified individual who will conduct the test. The method of testing to be used shall consider the effects of temperature, pressure and other variables and shall establish conclusively whether the tank or piping is leaking. The method of testing used shall comply with approved nationally recognized standards. Pneumatic testing shall not be used for tanks. Devices used for final testing of tanks shall be capable of detecting leaks as small as 0.05 gallon per hour (0.19 L/hr). For leaking tanks, see Section 3404.2.7. Leaking piping and equipment shall not be used until repaired or replaced. For piping testing, see Section 3403.6.3.

The code official is authorized to require that the test be conducted in the code official's presence.

3404.3.4.4 Special provisions for liquids used for maintenance and operation of equipment. In all occupancies, quantities of flammable and combustible liquids in excess of 10 gallons (38 L) used for maintenance purposes and the operation of equipment shall be stored in liquid storage cabinets in accordance with Section 3404.3.2. Quantities not exceeding 10 gallons (38 L) are allowed to be stored outside of a cabinet when in approved ~~containers~~ safety cans located in ~~private garages or other~~ approved locations.

In other than Group H Occupancies, quantities of flammable and combustible liquids used for demonstration, treatment and laboratory work exceeding 10 gallons (38 L) shall be stored in storage cabinets in accordance with Section 3404.3.2. Quantities not exceeding 10 gallons (38 L) shall be stored in approved safety cans, in approved locations.

3404.3.5.4 Combustible materials. In areas that are inaccessible to the public, Class I, II and IIIA liquids shall not be stored in the same pile or rack section as ordinary combustible commodities unless such materials are packaged together as kits.

Exception: When an approved fire suppression system is installed, alternate storage arrangements are permitted if they are consistent with the capabilities of the suppression systems.

3404.3.8.5 Warehouse hose lines. In liquid storage warehouses, ~~either~~ 1.5-inch (38 mm) lined or 1-inch (25 mm) hard rubber ~~hand~~ hose lines, or approved wheeled fire extinguishers

shall be provided in sufficient number to reach all liquid storage areas and shall be in accordance with Chapter 9.

3404.4.8 Empty containers and tank storage. Empty tanks and containers previously used for the storage of flammable or combustible liquids, unless free from explosive vapors, shall be stored as required for filled containers and tanks. Tanks and containers when emptied shall have the covers or plugs immediately replaced in openings and shall be separated from filled containers. Empty tanks and containers that have been rendered free of explosive vapors shall be visibly marked as "EMPTY," or the area where the containers are stored shall be marked with an approved sign indicating "EMPTY CONTAINERS."

3405.2.4 Class I, ~~and~~ II and III-A liquids. Class I, ~~and~~ II and III-A liquids shall be drawn or transferred into vessels, containers, or portable tanks using ~~by~~ one of the following methods:

1. From safety cans complying with UL 30.
2. Through an approved closed piping system.
3. From containers or tanks by an approved pump taking suction through an opening in the top of the container or tank.
4. For Class ~~IB, IC,~~ II ~~and~~ or III liquids, from containers or tanks by gravity through an approved self-closing or automatic-closing valve when the container or tank and dispensing operations are provided with spill control and secondary containment in accordance with Section 3403.4. Class ~~I~~A liquids shall not be dispensed by gravity from tanks.
5. Approved engineered liquid transfer systems.

   ~~**Exception:** Liquids in containers not exceeding a 5.3-gallon (20 L) capacity.~~

6. From original shipping containers with a capacity of 5 gallons (19 L) or less.

3405.3.3 Heating, lighting and cooking appliances. Heating, lighting and cooking appliances which utilize Class I liquids shall not be operated within a building or structure.

~~**Exception:** Operation in single-family dwellings.~~

3405.4.1 Unit with a capacity of 60 gallons or less. Solvent distillation units used to recycle Class I, II or IIIA liquids having a distillation chamber capacity of 60 gallons (227 L) or less shall be listed, labeled and installed in accordance with Section 3405.4 and UL 2208.

Exceptions:

1. Solvent distillation units installed in dry cleaning plants in accordance with Chapter 12.
2. Solvent distillation units used in continuous through-put industrial processes where the source of heat is remotely supplied using steam, hot water, oil or other heat transfer fluids, the temperature of which is below the auto-ignition point of the solvent.
3. Solvent distillation units listed for and used in laboratories.
4. Approved research, testing and experimental processes.

Solvent distillation units shall be grounded and bonded in accordance with the listing and Section 3405.3.2 .

Classes I, II and III-A liquids also classified as unstable (reactive) shall not be processed in solvent-distillation units.

Exception: Appliances listed for the distillation of unstable (reactive) solvents.

3406.2.4.4 Locations where above-ground tanks are prohibited. The storage of Class I and II liquids in above-ground tanks outside of buildings is prohibited within the districts of limitations ~~limits~~ established ~~by law~~ in ~~the adopting ordinance as the limits of districts in which such storage is prohibited~~ Section 203. See Houston Fire Department LSB Standard No. 13, "Outside Aboveground Tanks for Generators and Fire Pumps."

3406.2.5 Type of tank. Tanks shall be provided with top openings only ~~or shall be elevated for gravity discharge~~.

3406.2.5.1.1 Pumps and fittings. Tanks ~~with top openings only~~ shall be equipped with a tightly and permanently attached, approved pumping device having an approved hose of sufficient length for filling vehicles, equipment or containers to be served from the tank. Either the pump or the hose shall be equipped with a padlock to its hanger to prevent tampering. An effective antisiphoning device shall be included in the pump discharge unless a self-closing nozzle is provided. Siphons or internal pressure discharge devices shall not be used.

~~**3406.2.5.2 Tanks for gravity discharge.** Tanks with a connection in the bottom or the end for gravity-dispensing liquids shall be mounted and equipped as follows:~~

~~1. Supports to elevate the tank for gravity discharge shall be designed to carry all required loads and provide stability.~~

2. Bottom or end openings for gravity discharge shall be equipped with a valve located adjacent to the tank shell which will close automatically in the event of fire through the operation of an effective heat-activated releasing device. Where this valve cannot be operated manually, it shall be supplemented by a second, manually operated valve. The gravity discharge outlet shall be provided with an approved hose equipped with a self-closing valve at the discharge end of a type that can be padlocked to its hanger.

3406.3 Well drilling and operating. Wells for oil and natural gas shall be drilled and operated in accordance with Sections 3406.3.1 through 3406.3.8 Chapters 9, 23, and 31 of the *City Code*.

3406.3.1 Reserved. Location. The location of wells shall comply with Sections 3406.3.1.1 through 3406.3.1.3.2.

3406.3.1.1 Storage tanks and sources of ignition. Storage tanks or boilers, fired heaters, open-flame devices or other sources of ignition shall not be located within 25 feet (7620 mm) of well heads. Smoking is prohibited at wells or tank locations except as designated and in approved posted areas.

Exception: Engines used in the drilling, production and serving of wells.

3406.3.1.2 Streets and railways. Wells shall not be drilled within 75 feet (22 860 mm) of any dedicated public street, highway or nearest rail of an operating railway.

3406.3.1.3 Buildings. Wells shall not be drilled within 100 feet (30 480 mm) of buildings not necessary to the operation of the well.

3406.3.1.3.1 Group A, E or I buildings. Wells shall not be drilled within 300 feet (91 440 mm) of buildings with an occupancy in Group A, E or I.

3406.3.1.3.2 Existing wells. Where wells are existing, buildings shall not be constructed within the distances set forth in Section 3406.3.1 for separation of wells or buildings.

3406.3.2 Waste control. Control of waste materials associated with wells shall comply with Sections 3406.3.2.1 and 3406.3.2.2.

3406.3.2.1 Discharge on a street or water channel. Liquids containing crude petroleum or its products shall not be discharged into or on streets, highways, drainage canals or ditches, storm drains or flood control channels.

3406.3.2.2 Discharge and combustible materials on ground. The surface of the ground under, around or near wells, pumps, boilers, oil storage tanks or buildings shall be kept free from oil, waste oil, refuse or waste material.

3406.3.3 Sumps. Sumps associated with wells shall comply with Sections 3406.3.3.1 through 3406.3.3.3.

~~**3406.3.3.1 Maximum width.** Sumps or other basins for the retention of oil or petroleum products shall not exceed 12 feet (3658 mm) in width.~~

~~**3406.3.3.2 Backfilling.** Sumps or other basins for the retention of oil or petroleum products larger than 6 feet by 6 feet by 6 feet (1829 mm by 1829 mm by 1829 mm) shall not be maintained longer than 60 days after the cessation of drilling operations.~~

~~**3406.3.3.3 Security.** Sumps, diversion ditches and depressions used as sumps shall be securely fenced or covered.~~

~~**3406.3.4 Prevention of blowouts.** Protection shall be provided to control and prevent the blowout of a well. Protection equipment shall meet federal, state and other applicable jurisdiction requirements.~~

~~**3406.3.5 Storage tanks.** Storage of flammable or combustible liquids in tanks shall be in accordance with Section 3404. Oil storage tanks or groups of tanks shall have posted in a conspicuous place, on or near such tank or tanks, an approved sign with the name of the owner or operator, or the lease number and the telephone number where a responsible person can be reached at any time.~~

~~**3406.3.6 Soundproofing.** Where soundproofing material is required during oil field operations, such material shall be noncombustible.~~

~~**3406.3.7 Signs.** Well locations shall have posted in a conspicuous place on or near such tank or tanks an approved sign with the name of the owner or operator, name of the leasee or the lease number, the well number and the telephone number where a responsible person can be reached at any time. Such signs shall be maintained on the premises from the time materials are delivered for drilling purposes until the well is abandoned.~~

~~**3406.3.8 Field-loading racks.** Field-loading racks shall be in accordance with Section 3406.5.~~

CHAPTER 38
LIQUEFIED PETROLEUM GASES

3801.1 Scope. Storage, handling and transportation of LP-gas and the installation of LP-gas equipment pertinent to systems for such uses shall comply with this chapter and the Liquified Gas Safety Rules of the Railroad Commission of Texas ~~NFPA 58~~. Properties of LP-gases shall be determined in accordance with Appendix B of NFPA 58.

3801.2 Permits. Permits shall be required as set forth in Sections 105.6 ~~and 105.7~~ to store, use, handle or dispense LP-gas or to install or maintain LP-gas container(s) in excess of 125 gallons (473 L) aggregate water capacity. A permit is required to use any amount of LP-gas for demonstrations, public exhibitions, temporary commercial cooking or on mobile food carts.

Distributors shall not fill an LP-gas container for which a permit is required unless a permit for installation has been issued for that location by the code official.

3801.3 Construction documents. Where a single container is over 500 ~~more than 2,000~~ gallons (~~7570~~ 1893 L) in water capacity or the aggregate capacity of containers is over 2,000 ~~more than 4,000~~ gallons (~~15 140~~ 7570 L) in water capacity, the installer shall submit construction documents for such installation.

3803.2.1 Portable containers. Portable LP-gas containers, as defined in NFPA 58, shall not be used in or on buildings except as specified in NFPA 58 and Sections 3803.2.1.1 through 3803.2.1.7.

3803.2.1.2 Construction and temporary heating. Portable containers are allowed to be used in buildings or areas of buildings undergoing construction ~~or for temporary heating as set forth in Sections 3-4.3, 3-4.4, 3- 4.5 and 3-4.7 of NFPA 58~~ when attached to approved torches. The aggregate capacity of containers inside a building shall not exceed 250 pounds (113 kg) water capacity. Containers connected for use shall be promptly removed from the building when the torch is not in use. Containers not connected for use shall be stored outside the building in accordance with Table 3804.3. Portable LP-gas containers shall not be attached to temporary or portable heating appliances.

3803.2.1.3 Group F occupancies. In Group F occupancies, portable LP-gas containers are allowed to be used to supply quantities necessary for processing, research or experimentation. The aggregate capacity of containers inside a building shall not exceed 250 pounds (113 kg) water capacity. Containers connected for use shall not be stored inside a building or structure unless stored within a room constructed in accordance with the requirements of Section 3809.10. Containers not connected for use shall be stored outside

the building in accordance with Table 3809.12. ~~Where manifolded, the aggregate water capacity of such containers shall not exceed 735 pounds (334 kg) per manifold. Where multiple manifolds of such containers are present in the same room, each manifold shall be separated from other manifolds by a distance of not less than 20 feet (6096 mm).~~

3803.2.1.4 Group E and I occupancies. In Group E and I occupancies, portable LP-gas containers are allowed to be used for research and experimentation. Such containers shall not be used in classrooms. Such containers ~~shall not exceed a 50-pound (23 kg) water capacity in occupancies used for educational purposes and~~ shall not exceed a 12-pound (5 kg) water capacity. ~~in occupancies used for institutional purposes.~~ Where more than one such container is present in the same room, each container shall be separated from other containers by a distance of not less than 20 feet (6096 mm). The aggregate amount of LP-gas used or stored shall not exceed 60 pounds (27 kg) LP-gas capacity. In educational occupancies, portable LP-gas containers shall not be used or stored except as permitted by Sections 3803.2.1.5 and 3803.2.1.6.

3803.2.1.5 Demonstration uses. Portable LP-gas containers ~~are allowed to be used temporarily for~~ shall not be used for demonstrations and public exhibitions except when approved by the code official. ~~S~~ such containers shall not exceed a water capacity of 12 pounds (5 kg). Where more than one such container is present in the same room, each container shall be separated from other containers by a distance of not less than 20 feet (6096 mm). Containers not connected for use shall be stored outside the building in accordance with Table 3809.12.

3803.2.1.7 Use for food preparation inside buildings. ~~Where approved, listed LP-gas commercial food service appliances are allowed to be used for food-preparation within restaurants and in attended commercial food-catering operations in accordance with the *International Fuel Gas Code*, the *International Mechanical Code* and NFPA 58.~~ LP-gas containers shall not be used for residential or commercial food preparation inside of a building or structure.

Exception: When approved, listed LP-gas commercial food service appliances are allowed to be used for food preparation within restaurants and in attended commercial food catering operations provided that an individual appliance shall not have more than two 10-oz (0.3 L), non-refillable butane gas containers connected directly to the appliance any time. Containers shall comply with nationally recognized standards, have a maximum water capacity of 1.08 lbs (0.5 kg) per container and shall not be manifolded. The appliance's fuel containers shall be an integral part of the listed commercial food service device and shall be connected without the use of a rubber hose. The aggregate amount of LP-gas used or stored shall not exceed 60 lbs (27 kg) LP-gas capacity. In educational occupancies, portable LP-gas containers shall not be used or stored except as permitted by Sections 3803.2.1.5 and 3803.2.1.6.

3803.2.1.8 Use for food preparation outside buildings. When approved, LP-gas containers may be used for commercial cooking outside buildings in accordance with Houston Fire Department LSB Standard No. 10, "LP-Gas and Open Flame Use." For permits see Section 105.6.

3803.2.1.9 Group B and M occupancies. In Group B and M occupancies, portable LP-gas containers are allowed to be used to supply quantities necessary for minor repairs or minor fabrication work, when connected to an approved appliance. The containers shall not exceed a 12 pound (5 kg) water capacity. When more than one container is present in the same room, each container shall be separated from the others by a distance of not less than 20 feet (6096 mm). Containers not connected for use shall be stored outside the building in accordance with Table 3809.12.

3803.2.2 Industrial vehicles and floor maintenance machines. Containers on industrial vehicles and floor maintenance machines shall comply with NFPA 58, Section 3-6. Containers used on operating industrial lift trucks may be stored inside buildings but only while actually attached for use on the industrial lift truck. Industrial lift trucks stored inside a building shall be kept in an approved area. Containers not attached for use shall be stored outside the building in accordance with Table 3809.12.

3804.2 Maximum capacity within established limits. The storage and dispensing of LP-gas is prohibited within the district of limitations established in Section 203. ~~Within the limits established by law in the adopting ordinance restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons (7570 L).~~

Exception: ~~In particular installations, this capacity limit shall be determined by the code official, after consideration of special features such as topographical conditions, nature of occupancy, and proximity to buildings, capacity of proposed containers, degree of fire protection to be provided, and capabilities of the local fire department.~~ See Houston Fire Department LSB Standard No. 10, "LP-Gas and Open Flame Use."

3807.4 Protecting containers from vehicles and tampering. ~~Where exposed to vehicular damage due to proximity to alleys, driveways or parking areas,~~ When required by the code official LP-gas containers, regulators and piping shall be suitably protected in accordance with ~~Section 312~~ the Liquefied Petroleum Gas Safety Rules of the Railroad Commission of Texas.

3809.9 Storage within buildings ~~accessible to the public~~. Except as provided for in this Section and Section 3809.10, portable LP-gas containers shall not be stored in or on buildings or structures. Department of Transportation (DOTn) specification cylinders with maximum water capacity of 2.5 pounds (1 kg) used in completely self-contained hand torches and similar applications are allowed

to be stored or displayed in a building ~~accessible to the public~~. The quantity of LP-gas shall not exceed 200 pounds (91 kg) except as provided in Section 3809.11.

3809.10 ~~Storage within buildings not accessible to the public.~~ ~~The maximum quantity allowed in one storage location in buildings not accessible to the public, such as industrial buildings, shall not exceed a water capacity of 735 pounds (334 kg) [nominal 300 pounds (136 kg) of LP-gas]. Where additional storage locations are required on the same floor within the same building, they shall be separated by a minimum of 300 feet (91 440 mm). Storage beyond these limitations shall comply with Section 3809.11.~~

~~3809.10.1~~ Quantities on equipment and vehicles. Containers carried as part of service equipment on highway mobile vehicles ~~need not be considered in the total storage capacity in Section 3809.10,~~ may be stored within a building provided such vehicles are stored in private garages and do not carry more than three LP-gas containers with a total aggregate LP-gas capacity not exceeding 100 pounds (45.4 kg) per vehicle. Container valves shall be closed.

Appendix A
BOARD OF APPEALS

A101.2 ~~Membership~~ Organization. ~~The membership of the board shall consist of five voting members having the qualifications established by this section. Members shall be nominated by the code official or the chief administrative officer of the jurisdiction, subject to confirmation by a majority vote of the governing body. Members shall serve without remuneration or compensation, and shall be removed from office prior to the end of their appointed terms only for cause.~~ There is hereby created a Board of Appeals, consisting of 11 members. Five members at a meeting shall constitute a quorum. The positions on the board shall be filled as follows:

Position 1. By a well-respected citizen of the jurisdiction.

Position 2. By the Code Official or his duly authorized representative, who shall provide a board secretary.

Position 3. By the Fire Chief or his duly authorized representative.

Position 4. By the Director of Planning and Development or his duly authorized representative.

Position 5. By a well-respected citizen of the jurisdiction, who shall serve as chairman.

Position 6. By a professional engineer registered as such under the laws of Texas, who shall be actively engaged in the practice as a fire protection engineer.

Position 7. By a person who is a member of the Building Owners and Managers Association of Houston.

Position 8. By a person who is engaged or employed in the chemical or petroleum industry.

Position 9. By a person who is a member of the Houston Apartment Association.

Position 10. By a person who is fire protection contractor.

Position 11. By a person who is an architect registered by the State of Texas.

The legal department shall have an attorney present for each board meeting, who shall advise the board on legal matters relative to topics under board jurisdiction.

The Fire Chief, the Code Official (Fire Marshal), and the Director of Planning and Development may each designate in writing a person under his supervision to act in his place as his duly authorized representative. The representative designation shall be filed in the minutes of the board.

With the exception of the Fire Chief, the Code Official (Fire Marshal), and the Director of Planning and Development, members of the board shall be appointed by the Mayor, subject to confirmation by the City Council, and shall serve for a term of two years. The terms of the appointees for Positions 1, 6, 7, and 9 commence on January 1 of each odd-numbered year and end

on December 31 of the following even-numbered year. The terms of the appointees for Positions 5, 8, 10 and 11 commence of January 1 of each even-numbered year and end on December 31 of the following odd-numbered year. Members shall hold over until a successor is appointed and qualified.

Whenever any position on the board becomes vacant by reason of death, resignation or removal, the vacancy shall be filled for the unexpired term of the member being replaced. Should a vacancy occur on the board, the Mayor shall appoint, subject to confirmation by the City Council, another qualified person to serve the unexpired term of the vacancy. Any member of the board may be removed at any time by the Mayor without consent of the City Council.

~~**A101.2.1 Design professional.** One member shall be a practicing design professional registered in the practice of engineering or architecture in the state in which the board is established.~~

~~**A101.2.2 Fire protection engineering professional.** One member shall be a qualified engineer, technologist, technician, or safety professional trained in fire protection engineering, fire science, or fire technology. Qualified representatives in this category shall include fire protection contractors and certified technicians engaged in fire protection system design.~~

~~**A101.2.3 Industrial safety professional.** One member shall be a registered industrial or chemical engineer, certified hygienist, certified safety professional, certified hazardous materials manager, or comparably qualified specialist experienced in chemical process safety or industrial safety.~~

~~**A101.2.4 General contractor.** One member shall be a contractor regularly engaged in the construction, alteration, maintenance, repair, or remodeling of buildings or building services and systems regulated by the code.~~

~~**A101.2.5 General industry or business representative.** One member shall be a representative of business or industry not represented by a member from one of the other categories of board members described above.~~

A101.3 Per Diem. ~~Terms of office.~~ ~~Members shall be appointed for terms of four years. No member shall be reappointed to serve more than two consecutive full terms.~~ Each member of the board shall be compensated at the rate of $50.00 per diem for each meeting the member attends and at which a quorum is present; provided, however, no member shall be paid for more than three meetings in any one month. A jurisdiction employee who is a member of the board shall be paid only for those meetings that the employee attends at which a quorum is present and that are not held during, or that continue beyond, the employee's regular working hours.

~~**A101.3.1 Initial appointments.** Of the members first appointed, two shall be appointed for a term of 1 year, two for a term of 2 years, one for a term of 3 years.~~

~~**A101.3.2 Vacancies.** Vacancies shall be filled for an unexpired term in the manner in which original appointments are required to be made. Members appointed to fill a vacancy in an unexpired term shall be eligible for reappointment to two full terms.~~

~~**A101.3.3 Removal from office.** Members shall be removed from office prior to the end of their terms only for cause. Continued absence of any member from regular meetings of the board shall, at the discretion of the applicable governing body, render any such member liable to immediate removal from office.~~

A101.4 Duties of the Board of Appeals. ~~**Quorum.** Three members of the board shall constitute a quorum. In varying the application of any provisions of this code or in modifying an order of the fire official, affirmative votes of the majority present, but not less than three affirmative votes shall be required.~~ The duties of the board shall be to hear appeals from decisions of the code official as to the suitability of alternate materials and types of construction and to provide for reasonable interpretations of the provisions of this code. In cooperation with the Code Official, the board shall submit an annual report to the Mayor and the City Council containing a summary of the actions of the board during the preceding year. The board may make recommendations to the Mayor for amendments to this code.

A101.5 Procedures. ~~**Secretary of board.** The code official shall act as secretary of the board and shall keep a detailed record of all its proceedings, which shall set forth the reasons for its decisions, the vote of each member, the absence of a member, and any failure of a member to vote.~~ The board shall adopt reasonable rules and regulations for conduct of its duties. Petitions for hearings before the board shall be in writing, filed with the code official, and shall be heard by the board within 30 days from the date that the petition was filed. A majority of the members present, constituting a quorum, shall conduct business of the board. All decisions and findings shall be rendered in writing with copies to the Code Official, petitioner and all other parties to the hearing. Subject to compliance with Rule 12 of the City Council's Rules of Procedure (see Section 2-2 of the *City Code*), any interested person who is aggrieved by a decision of the board may appeal to the City Council, provided that written notice to the City Council for the appeal is delivered to the City Secretary within 10 days from the date the board renders the decision. All appeals to the City Council are subject to Rule 12 of the City Council's Rules of Procedure. Parties wishing to preserve their right of appeal must comply with Rule 12.

A101.6 Posting of agenda. ~~**Legal counsel.** The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration. Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties~~. The board shall prepare and post an agenda in compliance with the Texas Open Meetings Law.

~~**A101.7 Meetings.** The board shall meet at regular intervals, to be determined by the chairman. In any event, the board shall meet within 10 days after notice of appeal has been received.~~

~~**A101.8 Conflict of interest.** Members with a material or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations, and voting on such matters.~~

~~**A101.9 Decisions.** Every decision shall be promptly filed in writing in the office of the code official and shall be open to public inspection. A certified copy shall be sent by mail or otherwise to the~~

~~appellant, and a copy shall be kept publicly posted in the office of the code official for 2 weeks after filing.~~

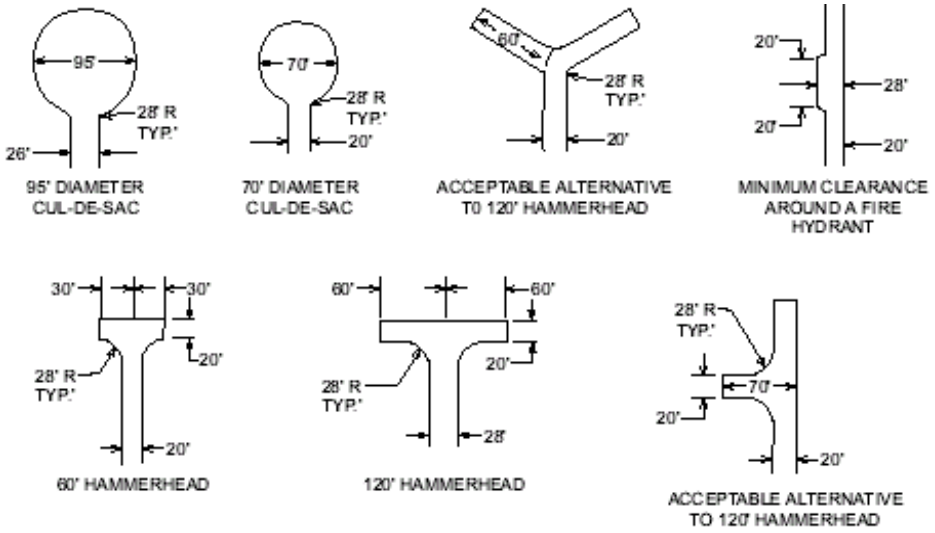
~~**A101.10 Procedures.** The board shall be operated in accordance with the Administrative Procedures Act of the state in which it is established or shall establish rules and regulations for its own procedure not inconsistent with the provisions of this code and applicable state law.~~

Appendix D
FIRE APPARATUS ACCESS ROADS

D101.1 Scope. Fire apparatus access roads shall be in accordance with this appendix, ~~and all~~ other applicable requirements of the ~~*International*~~ *Fire Code*, and Houston Fire Department LSB Standard No. 03, "Fire Department Access" and LSB Standard No. 04, "Access Control Gates."

D103.1 Access road width with a hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm). ~~See Figure D103.1.~~

EDITORIAL NOTE: *DELETE FIGURE D103.1* *(SEE BELOW)*



For SI: 1 foot = 304.8 mm.

FIGURE D103.1
DEAD-END FIVE APPARATUS ACCESS ROAD TURNAROUND

TABLE D103.4
REQUIREMENTS FOR DEAD-END FIRE APPARATUS ACCESS ROADS

LENGTH (feet)	WIDTH (feet)	TURNAROUNDS REQUIRED
0-150	20	None required
150-500	20	120 feet "Hammerhead," 60 feet "Y" or 96 feet diameter cul-de-sac ~~in accordance with Figure D103.1~~
501-750	26	120 feet Hammerhead, 60 feet "Y" or 96 feet diameter cul-de-sac ~~in accordance with Figure D103.1~~
Over 750	Special approval required	

For SI: 1 foot = 304.8 mm

D103.5 Fire apparatus access road gates. For fire apparatus access road gate requirements refer to Houston Fire Department LSB Standard No. 04, "Access Control Gates." ~~Gates securing the fire apparatus access roads shall comply with all of the following criteria:~~

~~1. The minimum gate width shall be 20 feet (6096 mm).~~

~~2. Gates shall be of the swinging or sliding type.~~

~~3. Construction of gates shall be of materials that allow manual operation by one person.~~

~~4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.~~

~~5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the code official.~~

~~6. Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools and~~

~~7. Locking device specifications shall be submitted for approval by the code official.~~

D103.6 Signs. For fire apparatus access road/Fire Lane sign requirements refer to Houston Fire Department LSB Standard No. 03, "Fire Department Access." ~~Where required by the code official, fire apparatus access roads shall be marked with permanent NO PARKING—FIRE LANE signs complying with Figure D103.6. Signs shall have a minimum dimension of 12 inches (305 mm) wide by 18 inches (457 mm) high and have red letters on a white reflective background. Signs shall be posted on one or both sides of the fire apparatus road as required by Section D103.6.1 or D103.6.2.~~

EDITORIAL NOTE: ***DELETE FIGURE D103.6*** *(See Below)*

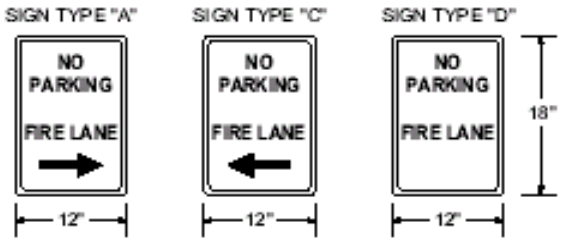


FIGURE D103.6
FIRE LANE SIGNS

Appendix H

STAIRWAY IDENTIFICATION

SECTION H101
GENERAL

H101.1 Signs in stairways. Standardized signs shall be provided in buildings that are four (4) or more stories in height. The signs shall be installed in stairways to identify each stair landing and indicate the upper and lower termination of the stairway. Signs within stairways shall be located above the floor landing in a position that is readily visible when the door is in the open or closed position. See also Section 1005.3.2.4.

SECTION H102
OCCUPANCY SIDE OF STAIRWAY DOORS

H102.1 Signs on occupancy (tenant) side of stairway doors. Standardized identification signs shall be located at each level on the occupancy (tenant) side of all enclosed stairways, regardless of the height of the building.

H102.2 Details for signs installed on the occupancy (tenant) side of doors.

H102.2.1 Stairway identification. Stairway identification signs shall have an Alphabetic Letter or Name identification, such as "STAIR A" or "WEST STAIR," to be placed at the top of the sign in 2-inch (50 mm) high block lettering.

H102.2.2 Reentry. Where stairway doors are locked from the stairway side to prohibit reentry to a floor, "NO REENTRY" shall be placed at the bottom of the sign in 1-inch (25 mm) high block lettering.

SECTION H103
SIGNS INSTALLED IN STAIRWAYS

H103.1 Stairway identification. Stairway identification signs shall have an Alphabetic Letter or Name identification, such as STAIR A or WEST STAIR, to be placed at the top of the sign in 1-inch (25 mm) high block lettering.

H103.2 Roof access. The roof access condition, such as ROOF ACCESS LOCKED or NO ROOF ACCESS, shall be placed under the stairway identification in 1-inch (25 mm) high block lettering.

H103.3 Floor level number. The floor level number shall be placed in the middle of the sign in 2-inch (50 mm) high block lettering. The mezzanine levels shall have the letter "M" preceding the floor number. Basement levels shall have the letter "B" preceding the floor number.

H103.4 Lower and upper terminus. The lower and upper terminus designation of the stairway shall be placed under the floor number in 1-inch (25 mm) high block lettering.

H103.5 Reentry. Where stairway doors are locked from the stairway side to prohibit reentry to a floor, NO REENTRY shall be placed under the lower and upper terminus designation in 1-inch (25 mm) high block lettering. Additionally, the nearest floor above and below where a person can enter the floor from the stairway or where a telephone or two-way communication system is located shall be placed at the bottom of the sign in 1-inch (25 mm) high block lettering.

SECTION H104
COMPLIANCE WITH TEXAS ACCESSIBILITY STANDARDS (TAS)

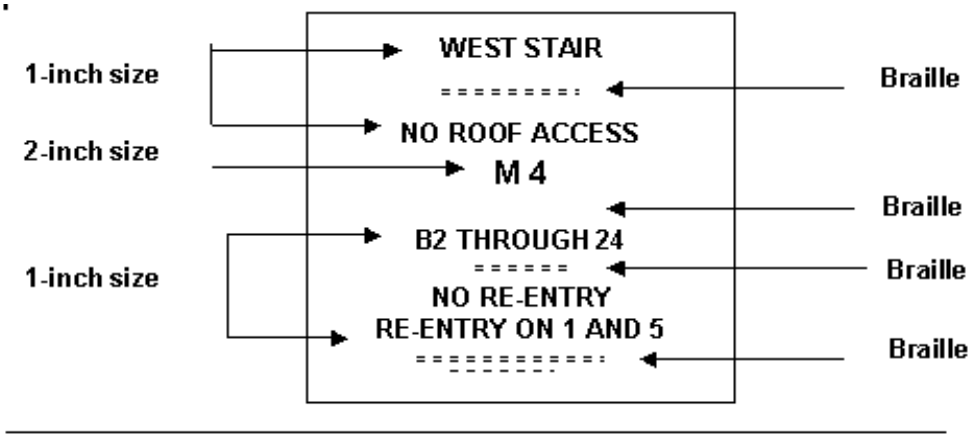
H104.1 Raised and braille characters/character proportions. Stairway identification, floor level number and reentry information on signs shall comply with TAS requirements for raised and braille characters. All other letters and numbers on the sign shall comply with TAS requirements for character proportions.

H104.2 Finish and contrast. All characters and backgrounds of signs shall comply with TAS requirements for finish and contrast.

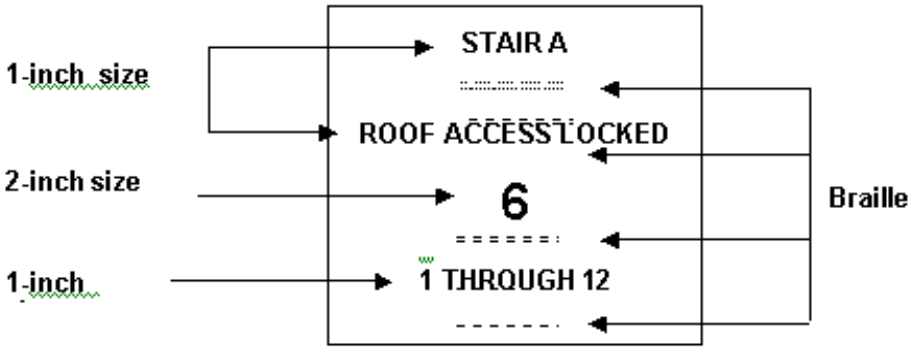
H104.3 Mounting location and height. All signs shall comply with TAS requirements for mounting location and height.

SECTION H105
SIGN EXAMPLES

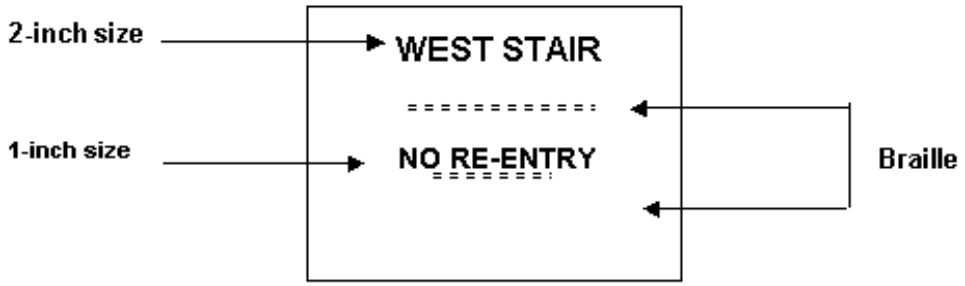
H105.1 Inside stairway: (With restricted re-entry)



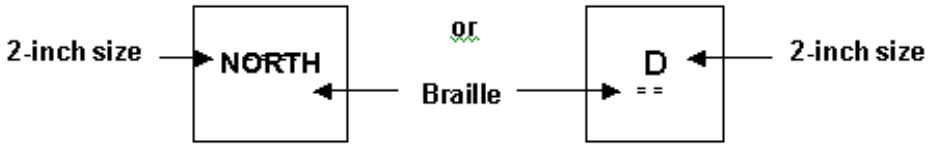
H105.2 Inside stairway: (Without restricted re-entry)



H105.3 Occupancy side of stairway: (With restricted re-entry)



H105.4 Occupancy side of stairway: (Without restricted re-entry)



INDEX